File 347:JAPIO Nov 1976-2[redacted]/Nov(Updated 040308)
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File 350:Derwent WPIX 1963-2004/UD,UM &UP=200419
(c) 2004 Thomson Derwent

Set	Items	Description
S1	2422	SEQUENCE()NUMBER? ?
S2	133376	(REPLICAT? OR DUPLICAT? OR COPY??? OR COPIE? ? OR REPRODUC? OR MIRROR?)(5N)(OBJECT? ? OR RECORD? ? OR DATA OR INFORMATION OR CONTENT? ? OR FILE? ? OR DOCUMENT? ? OR ITEM? ? OR ENTRY - OR ENTRIES)
S3	123166	SERVER? ?
S4	354	DIRECTORY()S3
S5	99	S1 AND S2
S6	11	S5 AND S3:S4

6/5/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO
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05993308 **Image available**
VIDEO INFORMATION PROVIDING CONTROL METHOD AND SYSTEM THEREFOR

PUB. NO.: 10-276408 [JP 10276408 A]
PUBLISHED: October 13, 1998 (19981013)
INVENTOR(s): OSHIMA TAKASHI
NAKAMURA OSAMU
KANAYAMA HIDEAKI
APPLICANT(s): NIPPON TELEGR & TELEPH CORP <NTT> [000422] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 09-079622 [JP 9779622]
FILED: March 31, 1997 (19970331)
INTL CLASS: [6] H04N-005/93; H04N-007/16; H04N-007/173
JAPIO CLASS: 44.6 (COMMUNICATION -- Television)
JAPIO KEYWORD:R101 (APPLIED ELECTRONICS -- Video Tape Recorders, VTR)

ABSTRACT

PROBLEM TO BE SOLVED: To provide an information providing control technology which quickly searches a video frame included in multimedia **information** and easily performs synchronous **reproduction** and special reproduction of a video.

SOLUTION: A **server** controlling part 11 of a multimedia information providing **server** 1 generates the **sequence number** of a video frame and frame information showing a leading byte position and makes them accumulated in video information in multimedia information which is generated and accumulated in a multimedia information generating part 12. The part 11 sends frame control information before the multimedia information to a multimedia information receiving client 2 through an information sending part 14 and a communication line 3. The client controlling part 22 of a client 2 quickly reads a video frame in multimedia information to be sent according to a subsequent sending request by reading the frame control information and referring to the information, synchronizes video with sound in a defined frame interval and further performs synchronous display of character graphic information.

6/5/2 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015860829 **Image available**
WPI Acc No: 2004-018659/200402
XRPX Acc No: N04-014654
Title: **for delivering multimedia data through wireless network, multiplexes subsequent packets read by referring** sequence number **in header according to transmission count, and outputs to interface**
Patent Assignee: HITACHI LTD (HITA)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 2003348102	A	20031205	JP 2002149978	A	20020524	200402	B

Priority Applications (No Type Date): JP 2002149978 A 20020524
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2003348102	A		19	H04L-012/28	

Abstract (Basic): JP 2003348102 A
NOVELTY - A controller adds a header (13) containing packet **sequence number** to multiple packet data obtained by subdividing the stream acquired from an interface. The adaptation data (14) for transmission count during delay is set and stored. The subsequent packets read, by referring **sequence number** in the header, are

multiplexed and outp[redacted]o the interface.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for program for **server** .

USE - For delivering multimedia data through wireless local area network (LAN), broadcast network.

ADVANTAGE - By reading and multiplexing subsequent data according to set transmission count during delay and **sequence number** in header, output without any **duplicate data** is realized.

DESCRIPTION OF DRAWING(S) - The figure shows an explanatory view of the data reconfiguration. (Drawing includes non-English language text).

stream (10)
output data (11)
subdivided data (12)
header (13)
adaptation data (14)
pp; 19 DwgNo 4/20

Title Terms: SERVE; DELIVER; DATA; THROUGH; WIRELESS; NETWORK; MULTIPLEX; SUBSEQUENT; PACKET; READ; REFER; SEQUENCE; NUMBER; HEADER; ACCORD; TRANSMISSION; COUNT; OUTPUT; INTERFACE

Derwent Class: T01; W01

International Patent Class (Main): H04L-012/28

International Patent Class (Additional): G06F-013/00

File Segment: EPI

6/5/3 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

015645393 **Image available**

WPI Acc No: 2003-707576/200367

Related WPI Acc No: 2000-115538; 2002-105025

XRPX Acc No: N03-565271

Participating application bypassing method in client- server network, involves deriving sequence synchronization factors from difference between last data sequence and acknowledgement numbers sent to client and server

Patent Assignee: CISCO TECHNOLOGY INC (CISC-N)

Inventor: COILE B W; HOWES R A; LEBLANC W M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6598081	B1	20030722	US 97903823	A	19970731	200367	B
			US 99430273	A	19991029		
			US 2001929825	A	20010813		

Priority Applications (No Type Date): US 97903823 A 19970731; US 99430273 A 19991029; US 2001929825 A 20010813

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6598081	B1		23	G06F-015/16	Cont of application US 97903823 Cont of application US 99430273 Cont of patent US 6006268 Cont of patent US 6298380

[illegible] (Basic): US 6598081 B1

NOVELTY - A client and **server** originated packet sequence [illegible]synchronization factors are derived from the difference between last [illegible]ata **sequence number** sent by participating application (224) to **server** and client and last data acknowledgement number sent by participating application to client and **server** respectively. The non-participating application (212) is initiated to communicate with client and **server** based on the client and **server** originated synchronization factors.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) computer program product for establishing non-proxy connection

between client and **server** ; and
(2) system for establishing non-proxy connection between client and **server** .
USE - For bypassing the participating applications in client-**server** network and Internet private exchange.
ADVANTAGE - Since the packets are handled by non- participating application, **copying** of **data** in the packet to the application layer is prevented and hence processing is minimized. The processing and memory resources in cut through proxy is saved by avoiding unwanted copying.
DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of cut through proxy system.
non- participating application (212)
participating application (224)
pp; 23 DwgNo 2/10
Title Terms: PARTICIPATING; APPLY; METHOD; CLIENT; SERVE; NETWORK; DERIVATIVE; SEQUENCE; SYNCHRONISATION; FACTOR; DIFFER; LAST; DATA; SEQUENCE; ACKNOWLEDGE; NUMBER; SEND; CLIENT; SERVE
Derwent Class: T01; W01
International Patent Class (Main): G06F-015/16
File Segment: EPI

6/5/4 **(Item 3 from file: 350)**
File 350:Derwent WPIX

010544551 **Image available**
WPI Acc No: 2003-606707/200357
XRPX Acc No: N03-483730
Non-invasive replication latency monitoring method for computer system, involves comparing update sequence numbers **and timestamps in replica vector tables of local and remote** servers , **respectively**
Patent Assignee: MICROSOFT CORP (MICT)
Inventor: PARHAM J B
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030101258	A1	20030529	US 2001995121	A	20011127	200357	B

Priority Applications (No Type Date): US 2001995121 A 20011127
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030101258	A1		18	G06F-015/173	

Abstract (Basic): US 20030101258 A1
NOVELTY - The update **sequence numbers** (USNs) and timestamps in the replica partner vector tables of the local and remote **servers** , are compared. A copy of replica vector table of the local **server** , that is updated based on the comparison result, is transmitted to the remote **server** . The difference between the timestamp for each **server** in the replica partner vector and current time, is calculated to monitor the replication latency.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for computer readable medium storing replication latency monitoring program.
USE - For monitoring non-invasive replication latency in computer system comprising several **servers** , in store-and-forward replication system.
ADVANTAGE - The failures preventing **replication** of **information** updates, are identified and rectified in timely and efficient manner.
DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of general purpose computer.
pp; 18 DwgNo 2/7
Title Terms: NON; INVADE; REPLICA; LATENT; MONITOR; METHOD; COMPUTER; SYSTEM; COMPARE; UPDATE; SEQUENCE; NUMBER; REPLICA; VECTOR; TABLE; LOCAL; REMOTE; SERVE; RESPECTIVE
Derwent Class: T01; W01

International Patent Cla(Main): G06F-015/173
File Segment: EPI

6/5/5 **(Item 4 from file: 350)**
DIALOG(R)File 350:Derwent WPIX
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015505490 **Image available**
WPI Acc No: 2003-567637/200353
XRPX Acc No: N03-451301
Update resolving method, involves creating ordering of operations using generated change sequence number **, and computing new state for entry from extracted state information and operation associated with entry**
Patent Assignee: SUN MICROSYSTEMS INC (SUNM); GOOD G (GOOD-I); MEGGINSON R (MEGG-I); MERRELLS J (MERR-I); NATKOVICH O (NATK-I); SMITH M C (SMIT-I)
Inventor: GOOD G; MEGGINSON R; MERRELLS J; NATKOVICH O; SMITH M C
Number of Countries: 002 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030088615	A1	20030508	US 2001993938	A	20011106	200353	B
GB 2386985	A	20031001	GB 200225916	A	20021106	200373	

Priority Applications (No Type Date): US 2001993938 A 20011106
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030088615	A1		17	G06F-017/60	
GB 2386985	A			G06F-017/30	

Abstract (Basic): US 20030088615 A1
NOVELTY - The method involves generating a change **sequence number** , and creating a total ordering of operations by using generated change **sequence number** . State information is extracted from an entry associated with an operation from the total ordering, and a new state is computed for entry using the extracted information and the operation associated with the entry.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(a) a **directory server**
(b) an apparatus for resolving updates in a **directory server** .
USE - Used for resolving updates in a **directory server** .
ADVANTAGE - The **directory server** holds a master **copy** of the **information** and automatically **copy** any updates to all replicas, thereby enabling the provision of highly available directory service and the geographically distribution of data. The method does not manage multiple instance of same information and reduce hardware and personnel costs. The system and method allows the application programmers to operate in stable and consistent environments.
DESCRIPTION OF DRAWING(S) - The drawing shows process to perform update resolution.
pp; 17 DwgNo 7/8
Title Terms: UPDATE; RESOLUTION; METHOD; ORDER; OPERATE; GENERATE; CHANGE; SEQUENCE; NUMBER; COMPUTATION; NEW; STATE; ENTER; EXTRACT; STATE; INFORMATION; OPERATE; ASSOCIATE; ENTER
Derwent Class: T01
International Patent Class (Main): G06F-017/30; G06F-017/60
International Patent Class (Additional): G06F-015/16
File Segment: EPI

6/5/6 **(Item 5 from file: 350)**
DIALOG(R)File 350:Derwent WPIX
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015505480 **Image available**
WPI Acc No: 2003-567627/200353
XRPX Acc No: N03-451291
Directory server **for intranet, has consumer to communicate with supplier** server **and number of pluggable services to manage** replication

of data using change sequence number
Patent Assignee: GOOD G (GOOD-I); MERRELLS J (MERR-I); NATKOVICH O (NATK-I)
; POITOU L (POIT-I); SHAH P (SHAH-I); SMITH M C (SMIT-I)
Inventor: GOOD G; MERRELLS J; NATKOVICH O; POITOU L; SHAH P; SMITH M C
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030088589	A1	20030508	US 2001993939	A	20011106	200353	B

Priority Applications (No Type Date): US 2001993939 A 20011106
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030088589	A1		11	G06F-012/00	

Abstract (Basic): US 20030088589 A1

NOVELTY - The **server** has a consumer **server** that communicates with a supplier **server** . A number of pluggable services manage **replication** of **data** contained within the **directory server** . A change **sequence number** is used to determine ordering of operations performed on the consumer **server** . The **replication** of **data** is managed using the change **sequence number** .

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of generating a change **sequence number** .

USE - Used for intranet or extranet while integrating with existing systems.

ADVANTAGE - The change of password made in one directory is automatically replicated in other directories. The **server** can be implemented virtually on any type of computer regardless of the traditional platform being used.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram of iPlanet Internet Service Development Platform.

pp; 11 DwgNo 6/6

Title Terms: DIRECTORY; SERVE; CONSUME; COMMUNICATE; SUPPLY; SERVE; NUMBER; PLUG; SERVICE; MANAGE; REPLICA; DATA; CHANGE; SEQUENCE; NUMBER
Derwent Class: T01
International Patent Class (Main): G06F-012/00
File Segment: EPI

6/5/7 **(Item 6 from file: 350)**
DIALOG(R)File 350:Derwent WPIX

015085476 **Image available**
WPI Acc No: 2003-145994/200314
Method for database replication
Patent Assignee: ALTIBASE CO LTD (ALTI-N)
Inventor: LEE G M; LEE J D
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
KR 2002075062	A	20021004	KR 200115244	A	20010323	200314	B

Priority Applications (No Type Date): KR 200115244 A 20010323
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
KR 2002075062	A		1	G06F-017/30	

Abstract (Basic): KR 2002075062 A

NOVELTY - A method for a database **replication** is provided to **copy** modified **contents** of a database(local database) with respect to many databases which are physically located at different portions into other databases(remote database).

DETAILED DESCRIPTION - Replication transmitters created by replication managers try a connection to replication receivers of a priority database **server** (S101,S102). If a replication receiver is connected, the **replication** transmitter transmits **information** of tables which participate in a replication to the replication receiver,

receives a replicati[redacted]constraint condition checking [redacted]ult, and checks a success or not(S103). A replication starting point is adjusted and the position thereof is stored in a corresponding **replication object** (S104). It is checked whether a replication terminating request is existed from a user database **server** or other database **server** (S105). If a replication terminating request is not existed and a replication LSN(XLSN, LSN: log **sequence number**) is not identified with the current LSN of the database **server** (S107), a log record of the XLSN position is obtained in a database log, and the XLSN value is increased(S108). If the obtained log record is not a data modification or transaction control log(S109), the stage is returned to the above (S105) stage. If the obtained log record is a data modification or transaction control log and a log record type is a transaction starting log, a transaction is registered in a replication transaction table.

pp; 1 DwgNo 1/10

Title Terms: METHOD; DATABASE; REPLICA
Derwent Class: T01
International Patent Class (Main): G06F-017/30
File Segment: EPI

6/5/8 **(Item 7 from file: 350)**
DIALOG(R)File 350:Derwent WPIX
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014902166 **Image available**
WPI Acc No: 2002-722872/200278
XRPX Acc No: N02-570051

Distributed database updating method for multiprocessor systems, minicomputers, involves generating separate requests by servers **for updating new attribute and existing attributes**

Patent Assignee: MICROSOFT CORP (MICT)
Inventor: LEES W B; PARHAM J B; SCHWARTZ E
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020120637	A1	20020829	US 2001793868	A	20010227	200278	B
US 6643670	B2	20031104	US 2001793868	A	20010227	200374	

Priority Applications (No Type Date): US 2001793868 A 20010227
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020120637	A1		10	G06F-012/00	
US 6643670	B2			G06F-017/30	

Abstract (Basic): US 20020120637 A1

NOVELTY - The value of a new attribute of an object in a distributed database that corresponds to zero update **sequence number** in source **server** , is retrieved upon a request by destination **server** . In the subsequent request, value of existing attributes is retrieved by the destination **server** from source **server** based on locally stored up-to-date vector table. The information about retrieved attributes are updated in local attribute value table.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for computer-readable medium storing distributed database updation program.

USE - For updating distributed databases in computer systems such as hand-held devices, multiprocessor systems, microprocessor based or programmable consumer electronics, network PCs, minicomputers, mainframe computers and distributed computing environments.

ADVANTAGE - Facilitates efficient **data replication** during reconfiguration of distributed database to update an additional attribute of object.

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart illustrating distributed database updation method.

pp; 10 DwgNo 2/3

Title Terms: DISTRIBUTE; DATABASE; UPDATE; METHOD; MULTIPROCESSOR; SYSTEM; MINICOMPUTER; GENERATE; SEPARATE; REQUEST; SERVE; UPDATE; NEW; ATTRIBUTE;

EXIST; ATTRIBUTE
Derwent Class: T01
International Patent Class (Main): G06F-012/00; G06F-017/30
File Segment: EPI

6/5/9 **(Item 8 from file: 350)**
DIALOG(R)File 350:Derwent WPIX
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013465148 **Image available**
WPI Acc No: 2000-637091/200061
XRPX Acc No: N00-472389
Object replication **and caching protocol in Internet, involves varying** sequence number **and setting** server **wait state or selecting file, when files need not and need to be sent to** servers **, respectively**
Patent Assignee: LUCENT TECHNOLOGIES INC (LUCE)
Inventor: LIN C; PAUL S; SABNANI K K
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6088721	A	20000711	US 98175188	A	19981020	200061	B

Priority Applications (No Type Date): US 98175188 A 19981020
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6088721	A		11	G06F-015/167	

Abstract (Basic): US 6088721 A

NOVELTY - When reception of request, with **server** identification and last timestamp from caching **servers** , is non-confirmed, it is determined whether more number of files is to be sent to any of the caching **servers** . **Sequence number** is changed and **server** wait state is set or further file selection is done, when files need not and need to be sent to the **servers** , respectively.

DETAILED DESCRIPTION - A **server** wait state is set after setting an initialization value to a **sequence number** . On receiving a file transmission request, a header including a filename, time stamp and **sequence number** is attached to a selected file. When reception of request, with **server** identification and last timestamp from caching **servers** , is confirmed, requested files and timestamps greater than last timestamp, are sent to **server** .

USE - In Internet.

ADVANTAGE - The protocol insures that the objects sent by a **server** to any of the caching **servers** actually arrive at the intended **server** even when the caching **servers** are temporarily unavailable, due to failure or network partition.

DESCRIPTION OF DRAWING(S) - The figure shows **server** state diagram.

pp; 11 DwgNo 3/5

Title Terms: OBJECT; REPLICA; PROTOCOL; VARY; SEQUENCE; NUMBER; SET; SERVE; WAIT; STATE; SELECT; FILE; FILE; NEED; NEED; SEND; SERVE; RESPECTIVE
Derwent Class: T01
International Patent Class (Main): G06F-015/167
File Segment: EPI

6/5/10 **(Item 9 from file: 350)**
DIALOG(R)File 350:Derwent WPIX
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013328145 **Image available**
WPI Acc No: 2000-500084/200045
XRPX Acc No: N00-370688
Data transmission method e.g. for performing data transmission in packet units between distribution server **and terminal, performing continuous data transmission from transmitting end to receiving end in units of packets**

Patent Assignee: MATSUSH[redacted] ELECTRIC IND CO LTD (MATU); [redacted]TSUSHITA DENKI SANGYO KK (MATU); FUKUSHIMA H (FUKU-I); HAGAI M (HAGA-I); HORII S (HORI-I); MATSUI Y (MATS-I); MIYAZAKI A (MIYA-I); OHNISHI T (OHNI-I)
Inventor: FUKUSHIMA H; HAGAI M; HORII S; MATSUI Y; MIYAZAKI A; OHNISHI T
Number of Countries: 027 Number of Patents: 009
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1006689	A2	20000607	EP 99123734	A	19991130	200045 B
JP 2001119437	A	20010427	JP 99340271	A	19991130	200130
US 20030009717	A1	20030109	US 99450590	A	19991130	200311
			US 2002227456	A	20020826	
US 6587985	B1	20030701	US 99450590	A	19991130	200345
JP 3450771	B2	20030929	JP 99340271	A	19991130	200364
JP 2003309617	A	20031031	JP 99340271	A	19991130	200374
			JP 2003146689	A	19991130	
US 20030226094	A1	20031204	US 99450590	A	19991130	200380
			US 2002227456	A	20020826	
			US 2003456842	A	20030609	
JP 2003324496	A	20031114	JP 99340271	A	19991130	200382
			JP 2003146690	A	19991130	
US 6684354	B2	20040127	US 99450590	A	19991130	200408
			US 2002227456	A	20020826	

Priority Applications (No Type Date): JP 99223379 A 19990806; JP 98340469 A 19981130
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1006689	A2	E	67	H04L-001/18	
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2001119437	A		39	H04L-012/56	
US 20030009717	A1			H04L-001/18	Cont of application US 99450590
US 6587985	B1			G08C-025/02	
JP 3450771	B2		33	H04L-012/56	Previous Publ. patent JP 2001119437
JP 2003309617	A		33	H04L-029/06	Div ex application JP 99340271
US 20030226094	A1			H03M-013/00	Cont of application US 99450590 Div ex application US 2002227456 Cont of patent US 6587985
JP 2003324496	A		32	H04L-029/06	Div ex application JP 99340271
US 6684354	B2			G11C-029/00	Cont of application US 99450590

Abstract (Basic): EP 1006689 A2

NOVELTY - The method involves performing continuous data transmission from the transmitting end to the receiving end in units of packets. Each packet has additional information relating to its **sequence number** , priority, and **data reproduction** time at the receiving end, while successively **reproducing data** of packets received at the receiving end.

DETAILED DESCRIPTION - At the transmitting end, giving priority information to each packet to be transmitted and storing, as retransmission data, only data of packets the priorities of which are equal to or higher than a set value, in a retransmission buffer. At the receiving end, when a transmission error is detected, detecting the priority information of an error packet. When the detected priority is equal to or higher than the set value, outputting a retransmission request for the error packet to the transmitting end by indicating the **sequence number** of this error packet. At the transmitting end, only when the data of the packet has the **sequence number** which is indicated by the retransmission request from the receiving end is stored in the retransmission buffer, retransmitting the data of this packet to the receiving end. Discarding the data stored in the retransmission buffer in order starting from a packet which cannot be in time **data reproduction** at the receiving end. An INDEPENDENT CLAIM is included for a data transmission apparatus, a data receiving apparatus

USE - For performing data transmission in packet units between distribution **server** and terminal.

ADVANTAGE - Improves transmission quality in radio section in real

time transmission.

DESCRIPTION OF DRAWING(S) - The figure shows a block diagram for explaining data transmission apparatuses as a relay **server** and a distribution **server** , respectively in a data transmission system according to a first embodiment of the invention.

pp; 67 DwgNo 1/34

Title Terms: DATA; TRANSMISSION; METHOD; PERFORMANCE; DATA; TRANSMISSION; PACKET; UNIT; DISTRIBUTE; SERVE; TERMINAL; PERFORMANCE; CONTINUOUS; DATA; TRANSMISSION; TRANSMIT; END; RECEIVE; END; UNIT; PACKET

Derwent Class: W01

International Patent Class (Main): G08C-025/02; G11C-029/00; H03M-013/00; H04L-001/18; H04L-012/56; H04L-029/06

International Patent Class (Additional): H04L-001/16; H04L-013/08; H04L-029/08; H04N-007/08; H04N-007/081; H04N-007/12; H04Q-007/38

File Segment: EPI

6/5/11 **(Item 10 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

011703350 **Image available**

WPI Acc No: 1998-120260/199811

XRPX Acc No: N98-095713

Concurrent server **update management method for distributed system - involves sending** sequence number **identifying client request to** servers **which check other update requests with lower numbers have been received and performing request if lower numbered requests performed**

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)

Inventor: LIN D D; SHI S; WEI Y

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5713017	A	19980127	US 95484228	A	19950607	199811	B

Priority Applications (No Type Date): US 95484228 A 19950607

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5713017	A		10	G06F-017/30	

Abstract (Basic): US 5713017 A

The **server** update management method involves sending a unique **sequence number** (155) identifying a client request derived from a first counter in a **server** to a group of **servers** and the client, in response to the client request. In response to a client update request including the **sequence number** each **server** checks against its second counter (157) that all other update requests with lower **sequence numbers** have been received.

In response to missing **sequence numbers** , update requests corresponding to the missing numbers are requested from other **servers** (16). The update request is performed (163) if all update requests upto the unique **sequence number** have been received by the respective **server** .

ADVANTAGE - Synchronises multiple updates to **replicated file** . Failures and recovery are transparent to users. Allows updates to **replicate file servers** even if one has failed. Supports heterogenous hardware platforms and file systems.

Dwg.3/3

Title Terms: CONCURRENT; SERVE; UPDATE; MANAGEMENT; METHOD; DISTRIBUTE; SYSTEM; SEND; SEQUENCE; NUMBER; IDENTIFY; CLIENT; REQUEST; SERVE; CHECK; UPDATE; REQUEST; LOWER; NUMBER; RECEIVE; PERFORMANCE; REQUEST; LOWER; NUMBER; REQUEST; PERFORMANCE

Derwent Class: T01; W01

International Patent Class (Main): G06F-017/30

File Segment: EPI

File 348:EUROPEAN PATENT[illegible]978-2004/Mar W03
(c) 2004 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20040325,UT=20040318
(c) 2004 WIPO/Univentio

Set	Items	Description
S1	7862	SEQUENCE()NUMBER? ?
S2	68767	(REPLICAT? OR DUPLICAT? OR COPY??? OR COPIE? ? OR REPRODUC? OR MIRROR?)(5N)(OBJECT? ? OR RECORD? ? OR DATA OR INFORMATION OR CONTENT? ? OR FILE? ? OR DOCUMENT? ? OR ITEM? ? OR ENTRY - OR ENTRIES)
S3	60889	SERVER? ?
S4	628	DIRECTORY()S3
S5	58	S1(50N)S2(50N)S3:S4

5/3,K/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01380214
Interactive authentication process
Interaktives Beglaubigungsverfahren
Procede d'authentification certifiee
PATENT ASSIGNEE:
ED Vision (Holdings) Limited, (3348070), P.O. Box 957, Offshore Incorporations Centre, Road Town, Tortola, (VG), (Applicant designated States: all)
INVENTOR:
[illegible], Tung Hung Daniel, B2, 3/F Chermain Heights, 9 Eastbourne Road, Kowloon, Hong Kong, (CN)
Zhang, Eugene Zhen Yu, 14G Block 22, Laguna City, Kowloon, Hong Kong, (CN)
LEGAL REPRESENTATIVE:
Harding, Richard Patrick (41295), Marks & Clerk, 4220 Nash Court, Oxford Business Park South, Oxford OX4 2RU, (GB)
PATENT (CC, No, Kind, Date): EP 1172776 A2 020116 (Basic)
EP 1172776 A3 021016
APPLICATION (CC, No, Date): EP 2001304171 010509;
PRIORITY (CC, No, Date): US 218951 P 000715; US 229743 P 000905
DESIGNATED STATES: DE; ES; FR; GB; IT
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: G07F-007/10
ABSTRACT WORD COUNT: 124
NOTE:
Figure number on first page: 2

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:
Available Text Language Update Word Count
CLAIMS A (English) 200203 1180
SPEC A (English) 200203 4020
Total word count - document A 5200
Total word count - document B 0
Total word count - documents A + B 5200

...SPECIFICATION writer 3, is operated by a merchant and is coupled to the Internet 4 via an access network 5 (e.g. a PSTN network). A **server** 6 belonging to a bank is coupled to the Internet 4 (via access networks not shown in Figure 2).
The smart card 1 comprises a...

...card memory 8 is a set of formulae and a set of values (or histories), i.e.:
Each formula and value is identified by a **sequence number** 1 to N. The formulae, values, and **sequence numbers** are stored in the smart card memory when the smart card is provided to the subscriber or may be stored at a later time. The...

...not allow the subscriber to easily delete or amend it. Typically, the smart card 1 is issued by the subscriber's bank and the stored **data** originates from that bank. A **copy** of the **data** is stored at the bank's **server** 6, and the data is unique to the subscriber.
A typical cashless financial transaction will now be described, assuming that the subscriber wishes to make a purchase from a merchant operating the **server** 2. The subscriber presents himself to the merchant and requests to make a purchase. The smart card 1 is inserted into the card reader 3...

5/3,K/4 (Item 4 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01244499
COMMUNICATION BETWEEN SOFTWARE ELEMENTS
KOMMUNIKATION ZWISCHEN SOFTWAREKOMPONENTEN
COMMUNICATION ENTRE ELEMENTS LOGICIELS
PATENT ASSIGNEE:
BRITISH TELECOMMUNICATIONS public limited company, (846100), 81 Newgate Street, London EC1A 7AJ, (GB), (Proprietor designated states: all)
INVENTOR:
POWERS, Simon, Julian, 2A Redan Street, Ipswich, Suffolk IP1 3PQ, (GB)
HINDS, Michael, Reuben, 25 Spriteshall Lane, Trimley St.-Mary, Felixstowe, Suffolk IP11 9QY, (GB)
LEGAL REPRESENTATIVE:
Lidbetter, Timothy Guy Edwin (77333), British Telecommunications PLC, BT Group Legal Services, Int. Prop. Dep., 8th Floor, 120 Holborn, London EC1N 2TE, (GB)
PATENT (CC, No, Kind, Date): EP 1192539 A1 020403 (Basic)
EP 1192539 B1 030416
WO 2000077630 001221
APPLICATION (CC, No, Date): EP 2000937093 000609; WO 2000GB2245 000609
PRIORITY (CC, No, Date): EP 99304559 990611
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: G06F-009/46
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200316	570
CLAIMS B	(German)	200316	526
CLAIMS B	(French)	200316	631
SPEC B	(English)	200316	8869
Total word count - document A			0
Total word count - document B			10596
Total word count - documents A + B			10596

...SPECIFICATION to track which endpoints were recently in the source's destination list, so if the endpoint's object decides to add them back again its **sequence number** can be advanced from its last value, rather than send it a "start of sequence" message. This is necessary to avoid a race condition with rapid add/remove/add sequences.
The Incoming Sequenced Source: requires the same **data** as for the sequenced **replicator** .
It is to be noted that Unsequenced sources and replicators do not have incoming distributors. As messages arrive at their destinations they can simply be passed straight through.
By way of example, the process of sending a message from a component hosted in the **server** cluster to a number of components hosted on respective client computers will now be illustrated having regard to Figure 8, illustrating a suitable architecture and...

5/3,K/5 (Item 5 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01152361
PROTOCOL FOR REPLICATED SERVERS
PROTOKOLL FUR REPLIZIERTE SERVER
PROTOCOLE POUR SERVEURS REPLIQUES
PATENT ASSIGNEE:
TELEFONAKTIEBOLAGET LM ERICSSON, (213761), , 126 25 Stockholm, (SE), (Proprietor designated states: all)
INVENTOR:
HOLMBERG, Per, Anders, Flintbacken 18, 3 tr, S-118 42 Stockholm, (SE)
LEGAL REPRESENTATIVE:
Hammar, Ernst et al (23061), Albihns Stockholm AB, Box 5581, 114 85

Stockholm, (SE)
PATENT (CC, No, Kind, Date): EP 1116115 A2 010718 (Basic)
EP 1116115 B1 030226
WO 2000017755 000330
APPLICATION (CC, No, Date): EP 99951348 990923; WO 99SE1673 990923
PRIORITY (CC, No, Date): US 159771 980924
DESIGNATED STATES (Pub A): AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE; (Pub B): DE; FI; FR; GB; IE; IT
INTERNATIONAL PATENT CLASS: G06F-011/14
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200309	530
CLAIMS B	(German)	200309	457
CLAIMS B	(French)	200309	634
SPEC B	(English)	200309	4936
Total word count - document A			0
Total word count - document B			6557
Total word count - documents A + B			6557

...SPECIFICATION client application C requesting a service, the primary server S 101, and the backup server S' 107. At any time it is sufficient that critical **information** be maintained in two redundant copies. However, these copies need not be maintained only by the primary server S 101 and the backup server S' 107 (as in a conventional two-phase commit protocol). Rather, the client can also be used for (temporarily) holding information.

For a simple **server** application, the replication is based on a message flow as illustrated in FIG. 2. A client application, C, accesses a primary **server** 101 via a protocol stack 205 running in the client processor. Counterpart protocol stacks 215, 215' also run in the primary and backup **server** processors, PRO1 and PRO2. Requests 201 are sent from the client application C to the primary **server** S 101. The protocol stack 215 of the primary **server** S 101 attaches a **sequence number** to the request and then processes the request. As a result of processing the request, the primary **server** S 101 generates and sends a reply message 203, via the protocol stack 215, to the client application C immediately. In accordance with one aspect of the invention, the **server** 's protocol stack 215 performs the additional function of storing the incoming request 201 in a queue whose contents are periodically communicated, via backup path 209, to the protocol stack 215' of the backup **server** S' 107. In accordance with another aspect of the invention, the reply message 203 to the client C also includes information indicating at what point in a sequence of incoming requests (since the last flush) the client's request 201 was processed (i.e., the **sequence number**).

When the client ...client application C, and 2) it sends a message 207 that may contain, for example, the original request as well as the reply to backup **server** 's protocol stack 215', whichpasses it to the backup **server** S' 107. In some embodiments, the backup **server** 's protocol stack 215' may send an acknowledge message 211 to the client's protocol stack 205, thereby confirming receipt of the client's message.

In addition to the backup **server** 's receiving information from the client application's protocol stack 205, whenever the queue in the primary server's protocol stack 215 reaches a predetermined...

5/3,K/6 **(Item 6 from file: 348)**
DIALOG(R)File 348:EUROPEAN PATENTS

00917974
Server system for delivering signal and delivery method of signal therein
Serversystem zur Signalubertragung und Signalubertragungsverfahren dafur
Systeme serveur pour le transfert de signal et procede de transfert de signal associe
PATENTHALTER:

CANON KABUSHIKI KAISHA [redacted]42361), 30-2, 3-chome, Shimoma[redacted]ko, Ohta-ku, Tokyo, (JP), (Proprietor designated states: all)
INVENTOR:
Yamamoto, Mitsuru, Canon Kabushiki Kaisha, 30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo, (JP)
LEGAL REPRESENTATIVE:
Leiman, Hans-Bernd, Dipl.-Ing. et al (9227), Patentanwaltsburo Tiedtke-Buhling-Kinne & Partner Bavariaring 4-6, 80336 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 837607 A2 980422 (Basic)
EP 837607 A3 020109
EP 837607 B1 040128
APPLICATION (CC, No, Date): EP 97118087 971017;
PRIORITY (CC, No, Date): JP 96276094 961018; JP 97271254 971003
DESIGNATED STATES: DE; FR; GB; IT; NL
EXTENDED DESIGNATED STATES: AL; LT; LV; RO; SI
INTERNATIONAL PATENT CLASS: H04N-007/173; G06F-013/12
ABSTRACT WORD COUNT: 15472
NOTE:
Figure number on first page: 1A

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200405	836
CLAIMS B	(German)	200405	709
CLAIMS B	(French)	200405	923
SPEC B	(English)	200405	12842
Total word count - document A			0
Total word count - document B			15310
Total word count - documents A + B			15310

...CLAIMS pattern so that said continuous data can be transmitted through different transmission channels simultaneously, wherein the memory unit control unit is arranged to control the **reading** of partial data out of the memory units in synchronization with the alteration of the transmission channels, so that the partial data is transmitted at the same transmission channel successively in time-series, thereby enabling the terminal equipments to receive the partial **data** read out successively from **said** memory units at the respective transmission channel corresponding to the respective fixed reception channel as continuous signal,

wherein said memory unit control unit comprises management tables for each memory unit, the management tables comprising entries for each terminal equipment and being arranged to register a continuous signal **to** be **reproduced** in an **entry** corresponding to the terminal equipment requesting the reproduction of said continuous signal, wherein **a sequence number** of partial **data** to be next delivered is set for each registered continuous signal in the respective entry, and said memory unit control unit is arranged to start reading out the first partial **data** of the **sequence** when said transmission channels are altered such that the requested continuous signal can be received by the terminal equipment requesting said continuous signal at the respective fixed reception **channel** .

2. A **server** system according to claim 1, wherein the transmission means are arranged to convert the **partial data** into optical signals of desired wavelengths.

3. A **server** system according to claim 1, wherein the transmission means are arranged to convert the partial data into modulated signals of desired frequencies.

4. A server...

...out successively from said memory units at the respective transmission channel corresponding to the respective fixed reception channel as continuous signal; and

registering a continuous **signal** to be **reproduced** in an **entry of** management tables comprising **entries** for each terminal equipment,

said management tables being provided for each memory unit, respectively, said **entry** corresponding to **the** terminal equipment requesting the reproduction of said continuous signal, wherein a **sequence number** of partial **data** to be next delivered is set for each registered continuous signal in the respective entry, and wherein reading out the first partial **data** of the sequence **is** started when said transmission channels are altered such that the requested continuous signal can be **received** by the terminal equipment requesting said continuous signal at the respective fixed reception channel.

5/3,K/7 **(Item 7 from file: 348)**
DIALOG(R)File 348:EUROPEAN PATENTS
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Information transmission system, information storing and providing apparatus, and information receiving apparatus
Informationsubertragungssystem, Informationsspeicher und Anbietergerat und Informationsempfangsgerat
Systeme de transmission d'informations, dispositif de stockage et de provisions d'informations et dispositif de reception d'informations
PATENT ASSIGNEE:
Oki Electric Industry Co., Ltd., (225692), 7-12, Toranomon 1-chome Minato-ku, Tokyo, (JP), (applicant designated states: AT;BE;CH;DE;DK;ES;FI;FR;GB;GR;IE;IT;LI;LU;MC;NL;PT;SE)
INVENTOR:
Nakajima Tatsuyoshi, c/o Oki Electric Industries Co., Ltd., 7-12, Toranomon 1-chome, Minato-ku Tokyo, (JP)
Hashimoto, Naoya, c/o Oki Electric Industries Co., Ltd., 7-12, Toranomon 1-chome, Minato-ku Tokyo, (JP)
LEGAL REPRESENTATIVE:
Read, Matthew Charles et al (47911), Venner Shipley & Co. 20 Little Britain, London EC1A 7DH, (GB)
PATENT (CC, No, Kind, Date): EP 827093 A2 980304 (Basic)
EP 827093 A3 990107
APPLICATION (CC, No, Date): EP 97306554 970827;
PRIORITY (CC, No, Date): JP 96226624 960828; JP 96226633 960828; JP 96226636 960828
DESIGNATED STATES: DE; FR; GB; IT
INTERNATIONAL PATENT CLASS: G06F-017/30;
ABSTRACT WORD COUNT: 104

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:
Available Text Language Update Word Count
CLAIMS A (English) 9810 869
SPEC A (English) 9810 8936
Total word count - document A 9805
Total word count - document B 0
Total word count - documents A + B 9805

...SPECIFICATION which seems to lie in the future in terms of its clock, the incorrect clock possibly obliges the terminal to discard every information given by **servers** .
Moreover, the amount of information to supply is often large. In this case, the information should be divided into many pieces. However, such pieces possibly...
...different from an original order, which depends on network condition. With packet communication, the order of the received pieces is confirmed in reference to the **sequence numbers** of packets. If the order proves to differs from the original order, the pieces may not serve to **reproduce** the **information** , this is, the above confirmation does not compensate for such a disorder.

SUMMARY OF THE INVENTION
Therefore, the object of the present invention is to...

5/3,K/8 (Item 8 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00885772
Log file optimization in a client/server computing system
Registrierdateioptimierung in einem Client/Server-Rechnersystem
Optimisation de fichier de journal dans un systeme d'ordinateur client/serveur
PATENT ASSIGNEE:
SUN MICROSYSTEMS, INC., (1392737), 901 San Antonio Road, MS PAL1-521, Palo Alto, California 94043, (US), (Proprietor designated states: all)
INVENTOR:
Mastors, Robert, 8340 Capewood Ct., Colorado Springs, Colorado 80920, (US)
LEGAL REPRESENTATIVE:
Hanna, Peter William Derek et al (72341), Tomkins & Co., 5 Dartmouth Road , Dublin 6, (IE)
PATENT (CC, No, Kind, Date): EP 810525 A1 971203 (Basic)
EP 810525 B1 000927
APPLICATION (CC, No, Date): EP 97201338 970503;
PRIORITY (CC, No, Date): US 654330 960528
DESIGNATED STATES: DE; FR; GB; NL; SE
INTERNATIONAL PATENT CLASS: G06F-011/14; G06F-017/30
ABSTRACT WORD COUNT: 173
NOTE:
Figure number on first page: 2

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200039	734
CLAIMS B	(German)	200039	710
CLAIMS B	(French)	200039	801
SPEC B	(English)	200039	5561
Total word count - document A			0
Total word count - document B			7806
Total word count - documents A + B			7806

5/3,K/9 (Item 9 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00822948
Synchronization between dissimilar computer server environments
Synchronisierung zwischen verschiedenen Computeranbieterumgebungen
Synchronisation entre des environnements de serveurs informatiques differents
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), New Orchard Road, Armonk, N.Y. 10504, (US), (Applicant designated States: all)
INVENTOR:
Feltz, Richard C., 1807 Walsh Drive, Round Rock, Texas 78681, (US)
Lin, Sy Long, 1106 Huntridge Circle, Austin, Texas 78758, (US)
Meegan, John Vincent, 10811 Callanish Park Drive, Austin, Texas 78750, (US)
Wadood, Syed Abdul, 11700 Metric Boulevard no. 501, Austin, Texas 78758, (US)
LEGAL REPRESENTATIVE:
Sutherland, David Peter (75471), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester, Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 765062 A2 970326 (Basic)
EP 765062 A3 040225
APPLICATION (CC, No, Date): EP 96306844 960920;
PRIORITY (CC, No, Date): US 533296 950925

DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G06F-017/30
ABSTRACT WORD COUNT: 203
NOTE:
  Figure number on first page: 3

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB97	584
SPEC A	(English)	EPAB97	10106
Total word count - document A			10690
Total word count - document B			0
Total word count - documents A + B			10690

...SPECIFICATION queue if necessary. For each replica in the cell, replica list 78 contains the replica's network address and ID, cell-relative name and the **sequence number** of the replica's last update. Further, **server** 70 stores a **copy** of each update in log **file** 76. This file is used in the event of a **server** restart to apply outstanding updates to the disk copy of the database and to recreate a propagation queue 80. The **server** also applies the update to the database in virtual memory and to its propagation queue 80. Periodically, **server** 70 writes the database in virtual memory 74 to disk 72. The master replica uses its propagation queue 80 to propagate updates to secondary replicas...

...80 in addition to its virtual memory database 74 and its log file 76. Each update in a propagation queue 80 is identified by a **sequence number** and time stamp. The **sequence number** is used internally to control the propagation of updates to secondary replicas. The time stamp is provided to show users date and time of updates...

...queue 80 from log file 76 so that any outstanding secondary updates can be propagated. This mechanism ensures that no updates are lost when a **server** is shut down. It is for these operations that synchronization is important.

Thus has been disclosed and described a database synchronization system for synchronizing a...

5/3,K/10 (Item 10 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

0004

SYSTEM AND METHOD FOR COMMUNICATION WITH A REMOTE NETWORK DEVICE
SYSTEM UND VERFAHREN ZUR KOMMUNIKATION MIT EINEM ENTFERNTEN NETZWERK-APPARATUS
SYSTEME ET PROCEDE DE COMMUNICATION AVEC UN DISPOSITIF DE RESEAU A DISTANCE

PATENT ASSIGNEE:
  DIGI INTERNATIONAL INC., (1553820), 6400 Flying Cloud Drive, Eden Prairie, MN 55344, (US), (Proprietor designated states: all)
INVENTOR:
  OLSON, Gene, H., 5131 Aldrich Avenue South, Minneapolis, MN 55419, (US)
LEGAL REPRESENTATIVE:
  Hoarton, Lloyd Douglas Charles et al (80191), Forrester & Boehmert, Pettenkoferstrasse 20-22, 80336 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 750768 A1 970102 (Basic)
EP 750768 A1 981223
EP 750768 B1 020828
WO 95025311 950921
APPLICATION (CC, No, Date): EP 95913686 950315; WO 95US3183 950315
PRIORITY (CC, No, Date): US 213197 940315
DESIGNATED STATES: DE; FR; GB; IT
INTERNATIONAL PATENT CLASS: G06F-015/16; H04L-012/24; H04L-029/06; G06F-013/10; G06F-013/40
NOTE:
  No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200235	519
CLAIMS B	(German)	200235	482
CLAIMS B	(French)	200235	583
SPEC B	(English)	200235	11917
Total word count - document A			0
Total word count - document B			13501
Total word count - documents A + B			13501

...IDENTIFICATION 216 requests to read data, the host operating system calls the read routine of the driver 200. If sufficient data has been received from the **server** 20, according to the parameters ...the API of the host operating system 215.

After the driver 200 has removed data from the receive buffer 206, the driver 200 informs the **server** 20 that this data has been removed by incrementing a **sequence number** (RWIN) by the number of bytes removed, as described above. The **server** 20 is then authorized to send additional data until that data reaches the **sequence number** RWIN.

When a user mode task 216 requests to write data, the host operating system 215 calls the write routine of the driver 200. If the driver 200 then **copies** as much of the user **data** as will fit into the transmit buffer 208. If all of the data could be placed in the transmit buffer 208, the **server** 20 completes the request, and the user mode task 216 is allowed to continue. If not all of the data fit in the transmit buffer 208, the driver 200 puts the user mode task 216 to sleep until data can be sent to the **server** 20, freeing up enough space in the transmit buffer 208 so the remaining data can be placed in the buffer 208.

When a user mode...

5/3,K/18 (Item 18 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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0394021
Multicast data distribution system.
Mehrfachaussendungsdatenubermittlungssystem.
Systeme de repartition de donnees a recepteurs multiples.
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:
Naron, Steven E., 9909 Sorrel Avenue, Potomac Maryland 20854, (US)
Branan, John M., 404 Suffield Drive, Gaithersburg Maryland 20878, (US)
Martin, Gerland Arnold, 12528 War Admiral Way, Darnestown Maryland 20878, (US)
LEGAL REPRESENTATIVE:
Schafer, Wolfgang, Dipl.-Ing. (62021), IBM Deutschland Informationssysteme GmbH Patentwesen und Urheberrecht, D-70548 Stuttgart, (DE)
PATENT (CC, No, Kind, Date): EP 303830 A2 890222 (Basic)
EP 303830 A3 910206
EP 303830 B1 940202
APPLICATION (CC, No, Date): EP 88111425 880715;
PRIORITY (CC, No, Date): US 87850 870821
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: H04L-012/18;
ABSTRACT WORD COUNT: 188

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	1346
CLAIMS B	(German)	EPBBF1	1154
CLAIMS B	(French)	EPBBF1	1615
SPEC B	(English)	EPBBF1	11554

from said communications network;
negative acknowledgement means in each said receiver means for anticipating the receipt of said...

5/3,K/19 **(Item 1 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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01090143 **Image available**
CONSISTENT MESSAGE ORDERING FOR SEMI-ACTIVE AND PASSIVE REPLICATION
CLASSEMENT COHERENT DE MESSAGES POUR DUPLICATION SEMI-ACTIVE ET PASSIVE
Patent Applicant/Assignee:
[illegible] SYSTEMS INC, 5290 Overpass Road, Building D, Santa Barbara, CA [illegible], US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
MOSER Louise E, P.O. Box 13963, Santa Barbara, CA 93107, US, US (Residence), US (Nationality), (Designated only for: US)
MELLIAR-SMITH Peter M, P.O. Box 13963, Santa Barbara, CA 93107, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
O'BANION John P (agent), O'BANION & RITCHEY LLP, Suite 1550, 400 Capitol Mall, Sacramento, CA 95814, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200412061 A2 20040205 (WO 0412061)
Application: WO 2003US23778 20030729 (PCT/WO US03023778)
Priority Application: US 2002399580 20020729
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 14906

Fulltext Availability:
Detailed Description

Detailed Description
... divert messages of these various kinds from the standard protocol stacks to the mechanisms of this invention.

[0042] For synchronous or asynchronous requests, the primary **server** replica 1 5 processes the requests that it receives from the primary client replica in an order determined by **sequence number** order, reception order, priority, deadline, fairness, availability of resources or other message scheduling criteria, and generates ordering information corresponding to the order in which it processes the messages. The primary **server** replica communicates that ordering information to the backup **server** replicas, either directly or indirectly, after it has started processing those requests and either before or concurrently with its transmission of a reply. It piggybacks...

...and invokes methods of other servers. The terms first object and second object are also used to refer to the client object and the server **object**. The invention supports replication of both client objects and server [illegible].

Although some of the di[redacted]rams below show only a single c[redacted]ent object, typically there...

...client object.

[redacted] The mechanisms of the current invention are unaffected by any of [redacted] extensions.

[redacted] For applications in which both clients and **servers** are replicated using semi-active or passive replication, the primary client multicasts a request message containing a method invocation to the replicas of the **server** on a connection.

[0073] When the primary **server** receives a (synchronous or asynchronous) request message on a connection, it processes that message in an order determined by **sequence number** order, reception order, priority, deadline, fairness, availability of resources or other message scheduling criteria and executes the method contained in that request message. The primary **server** piggybacks, in its reply message to the client, or in a nested request message to another **server** , ordering information that specifies the order in which it
processed the request message. The ordering information determines the order in which the backup **servers** process the request message, so that they can reproduce the actions of the primary **server** and, thus, maintain strong replica consistency. The primary **server** then multicasts the reply message, containing the result of the operation and the piggybacked message ordering information, to the replicas of the client or it multicasts the nested request
message, containing a method invocation of that other **server** and the piggybacked message ordering information, to the replicas of that other **server** .

[0074] Similarly, when a primary client replica receives an asynchronous reply
message, it delivers that message in an order determined by **sequence number** order, reception order, priority, deadline, fairness, availability of
resources or other message scheduling criteria. The primary client piggybacks, in its next request message, the message...

...of the primary
client and, thus, maintain strong replica consistency. The primary client then multicasts the next request message, containing the method invocation of the **server** and the piggybacked message ordering information, to the replicas of the **server** .

[0075] When a client replica receives a synchronous reply message, the client
replica can deliver the reply message to the replicas for processing immediately upon

5/3,K/20 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

01065085 **Image available**
FILE TRANSFER METHOD AND APPARATUS
PROCEDE ET APPAREIL DE TRANSFERT DE DONNEES
Patent Applicant/Assignee:
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Legal Representative:
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Patent and Priority Information (Country, Number, Date):
Patent: WO 200396646 A1 20031120 (WO 0396646)
Application: WO 2003CA558 20030416 (PCT/WO CA0300558)
Priority Application: CA 2385344 20020508
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 2735

Fulltext Availability:
Detailed Description

Detailed Description
... establish a multi-channel pipeline within high-speed link 18 from the source node 14 to the target node 12. A desired file resident on **server** 42 of node 14 is first parsed into chunks of predetermined size appended with a **sequence number** and placed into circular buffer 50. Circular buffer 50 is emptied into a next available channel in the multi-channel established in high-speed link...
...node 12 stores the incoming chunks in circular buffer 48 then transfers them in the file parser/assembler 52 into memory and depends upon the **sequence number** . Once the file is reassembled it is transferred to **server** 40 and made available to end user 60.

The method of Figs 1 and 2 include the following functionality.

1) File Creation
a) store locally, e.g. **Servers** 40 and 42
b) store and transmit via the fast **copy** channel (FCC) as **file** is created.

For example converting analogue or digital broadcast video to an MPEG file.

2) File selection/transmission using web/database user interface and FCC;
3) Selection ad playback of broadcast video using web/database interface
4) Retrieval from archive of video onto operational **servers** eg. 40 and 42, using web/database interface.

Referring to Fig. 3 there is illustrated in a fimctional block diagram further detail of the file...

5/3,K/24 **(Item 6 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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01051357 **Image available**
IMPROVEMENTS RELATING TO FAULT-TOLERANT COMPUTERS
AMELIORATIONS APPORTEES A DES ORDINATEURS INSENSIBLES AUX DEFAILLANCES
Patent Applicant/Assignee:
NEVERFAIL GROUP PLC, Aldermaston Park, Aldermaston, Berkshire RG7 4HR, GB , GB (Residence), GB (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
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GEORGE Felicity Anne W[redacted]sworth, Keir Stud House, By Du[redacted]ne, Perthshire FK15 9NU, GB, GB (Residence), GB (Nationality), (Designated only for: US)
STONES Thomas, 34 Menteith View, Dunblane, Perthshire FK15 0PD, GB, GB (Residence), GB (Nationality), (Designated only for: US)
Legal Representative:
AHMAD Sheikh Shakeel (et al) (agent), David Keltie Associates, Fleet Place House, 2 Fleet Place, London EC4M 7ET, GB,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200381430 A2 20031002 (WO 0381430)
Application: WO 2003GB1305 20030320 (PCT/WO GB0301305)
Priority Application: GB 20026604 20020320
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 15573

Fulltext Availability:
Detailed Description

Detailed Description
... data has been synchronised, the processes 22a and 22b can be run in the NeverFail mode. To do this, the process 22a on the coordinator **server** 14a is stopped and immediately restarted as one of a pair of processes (or a triplet of processes).
Alternatively, the current states of the process 22a running on the coordinator **server** 14a can be copied to the participant **server** 14b so that the process 22a does not have to be stopped.

As explained above, during the synchronisation process, **data files** are **copied** from the coordinator **server** 14a to- the participant **server** 14b via the Ethernet connection 30. Even with effective data compression, implementing the synchronisation method 500 on the system 10a will result in a much higher demand for bandwidth than durmlg normal operation when only **sequence numbers** (SSNs), checksums and I/O completion codes are exchanged. The synchronisation method 500 is also quite time consuming. For example, if a 100Mb Ethernet connection...

5/3,K/25 **(Item 7 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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01022589 **Image available**
DIGITAL CONTENT DISTRIBUTION SYSTEM
SYSTEME DE DISTRIBUTION DE CONTENU NUMERIQUE
Patent Applicant/Assignee:
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Patent Applicant/Inventor:
MCLEAN Ivan Hugh, 4612 Vereda Mar Del Sol, SAN DIEGO, CA 92103, US, US (Residence), US (Nationality), (Designated only for: US)
WAJS Andrew Augustine, Schotersingel 93, NL-2023 AA HAARLEM, NL, NL (Residence), GB (Nationality), (Designated only for: US)
Legal Representative:
[redacted] VRIES Johannes Hendrik F (agent), Overschiestraat 180, NL-1062 XK AMSTERDAM, NL,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200352630 A2-A3 20030626 (WO 0352630)
Application: WO 2002EP14828 20021218 (PCT/WO EP0214828)

Priority Application: [redacted]2001342718 20011219
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO
RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SI SK
TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 14623

Fulltext Availability:
Detailed Description
Claims

Detailed Description
... varying session keys, that are in turn encrypted with the product key. The same encryption scheme can be used for video, audio and any associated **data** (the **content**). In other CONFIRMATION **COPY** messages are called IPMP (Intellectual Property Management and Protection) Messages.
In one embodiment, the IPMP Messages are streamed from the first distribution **server** 4. In another embodiment, 5 the IPMP Message stream is downloaded by the client system 2 from a second distribution **server** 8. Alternatively, the IPMP Messages could be comprised in a separate file on key stream carrying medium 9, distributed separately, for example a CDROM, DVD...

...flash memory device, smart card, etc.

In one embodiment, the key values are provided separately. In that case, the key messages contain pointers linked to **sequence** **numbers**, enabling the keys to be retrieved by the client system 2. For instance, the keys could be stored on the key stream carrying medium 9, whereas the IPMP Message Stream is provided from the second distribution **server** 8.

In another embodiment, the key messages also contain the key values. Opaque data in the IPMP Message Stream could associate keys with media in...the encrypted access unit 3 has been encapsulated by an application implementing the sync layer, defined in the MPEG-4 standard, on the first distribution **server** 4. Accordingly, the IP packet comprises an SL ...forms the secure wrapper. It is identical to the header 16 described above, except that it further comprises an explicit synchronisation sequence 60, identical CONFIRMATION **COPY** to the explicit synchronisation **information** 23,24 of the crypto Resync Markers 14,15. The header 59 further comprises the bit flag 18 indicating encryption of the access unit 3, the bit flag 19 indicating authentication, the CRM flag 20, the reserved field 21 and the **sequence** **number** field 22. The first encrypted AU section 11 follows the header 59. The

Claim
... one key having a cycling key value.

28 Method according to claim 26 or 27, comprising transmitting packets wherein each resynchronisation marker includes a unique **sequence** number.

29 Method according to any one of claims 26-28, comprising transmitting packets wherein each message is encapsulated by wrapper including a unique sequence...

...any one of claims 28-30, further comprising transmitting at least one key message, each key message carrying data linking at least one unique sequence **number** included in a message to a key value ...being decodable by a decoder application on a client terminal, said server including: a network interface for transmitting a plurality of data packets from the **server** through a network, each packet including at least one header and a payload, each payload including at least part of a message, the **server** further including a series of at least one service interface between two layers in a protocol stack, each ...sequence, at least one of the message sections being encrypted in such a way as to be decryptable independently of the other message sections.

33 **Server** according to claim 32, wherein the message sections are encrypted in such a way as to be decryptable using at least one key having a cycling key value.

34. **Server** according to claim 32 or 33, configured to transmit packets wherein each resynchronisation marker includes a unique **sequence number** .

35 **Server** according to any one of claims 32-34, configured to transmit packets wherein each message is encapsulated by a wrapper including a unique **sequence number** .

36 **Server** according to claim 34 or 35, configured to provide each unique **sequence number** in a self describing format.

Server according to claim 33 and any one of claims 34-36, further configured to transmit at least one key message, each key message carrying data linking at least one unique **sequence number** included in a message to a key value enabling decryption of at least parts of that message.

38 Client terminal for receiving and processing digital...

5/3,K/27 **(Item 9 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT

00979179 **Image available**
PARALLELIZED REDO-ONLY LOGGING AND RECOVERY FOR HIGHLY AVAILABLE MAIN MEMORY DATABASE SYSTEMS
ENREGISTREMENT CHRONOLOGIQUE ET RECUPERATION DE DONNEES UNIQUEMENT <=REDO>= EN PARALLELE POUR DES SYSTEMES DE BASE DE DONNEES A MEMOIRE PRINCIPALE A HAUTE DISPONIBILITE
Patent Applicant/Assignee:
TRANSACT IN MEMORY INC, The Automation and Systems, San 56-1, Shilim-dong, Kwanak-gu, 133-405 Seoul, KR, KR (Residence), KR (Nationality)
Inventor(s):
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[illegible] Chang, Navy Apt. 109-601, Wonjung-li, Poseung-myun, [illegible]-shi, 451-822 Kyongki-do, KR,
KIM Ki Hong, Shiyoung Apt., 112-412, Karak-dong, Songpa-gu, 138-160 Seoul, KR,

Legal Representative:
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Patent and Priority Information (Country, Number, Date):
Patent: WO 200309139 A1 20030130 (WO 0309139)
Application: WO 2002KR1341 20020716 (PCT/WO KR0201341)
Priority Application: US 2001305956 20010716; US 2001305937 20010716
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 11585

Fulltext Availability:
Claims

Claim
... PVN, proceeding to the next step, otherwise releasing the latch and skipping this page;
C. for each slot in the page,
(i) if the update **sequence number** is larger than the stored update sequence 20 -number, override- the ftnage and the stored **sequence number** with the after image and
the new update **sequence number** , respectively,
(iii) otherwise, ignoring the current update record; and
D. releasing the latch.

39 A method for hot-standby in a transaction service system using a database where a slave **server** takes over a master **server** in case of a problem wherein the two **servers** exchange heartbeat messages for monitoring working conditions and the system stores log records representing incremental changes to the database, the method comprising the step of taking over the slave **server** that further comprises the steps of.
waiting until all received log records are displayed;
aborting all active transactions at the moment;
setting a sync
position...

5/3,K/29 (Item 11 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00939293 **Image available**
MULTI-OUTPUT PACKET SERVER WITH INDEPENDENT STREAMS
SERVEUR DE PAQUETS A SORTIES MULTIPLES ET FLUX INDEPENDANTS
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ATTIAS Roberto, 3 Lakeshore Court, Richmond, CA 94804, US,
WALFISH Michael, 1295 Guerrero #1, San Francisco, CA 94110-3635, US,
HERNEK Diane, 4178 Montgomery St., Oakland, CA 94611, US,
BYERS John, 55 Elgin Street, Newton, MA 02459, US,

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STANTON Gregory E (et al) (agent), Townsend & Townsend & Crew, LLP., 2 Embarcadero Center, Eighth Floor, San Francisco, CA 94111-3834, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200273427 A1 20020919 (WO 0273427)
Application: WO 2002US6841 20020305 (PCT/WO US0206841)
Priority Application: US 2001274445 20010309; US 2001882508 20010615
Designated States: AE AG AL AM AT AT (utility model) AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ CZ (utility model) DE DE (utility model) DK DK (utility model) DM DZ EC EE EE (utility model) ES FI FI (utility model) GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SK (utility model) SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 28648

Fulltext Availability:
Detailed Description

Detailed Description
... herein for illustrative purposes only and is not intended to limit the scope of the invention. A replication system 900 of a TCP-like hydra **server** differs from that of the embodiments described above, including in its interaction with hydra clients. Each packet that arrives to the TCP-like replication system...

...session client lists 950. These parameters may include information on a current TCP window such as a cur-rent size of the window, a highest **sequence number** received in a packet such that all previous **sequence numbers** have also been received, a time-out value for the connection and an estimated round-trip time to the hydra client.

- Unlike the TCP-like hydra **server** , a standard TCP sender would also have to maintain a **copy** of all the **content** within the window, which can be tens or hitndreds or more of kilobytes of buffer space per requesting hydra client. The reason for this is...

...TCP sender would have to retransmit portions of this content if the requesting hydra client indicates that packets were lost that contained portions of this **content** . As described below, maintaining a **copy** of any portion of the original content is avoided by the TCP-like replication system 900, and this is a significant advantage of the TCP...

5/3,K/43 **(Item 25 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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Image available
A METHOD AND APPARATUS IN A COMMUNICATION NETWORK FOR UPDATING AND MAINTAINING RECORD DATA
PROCEDE ET APPAREIL D'UN RESEAU DE COMMUNICATION DESTINE A LA MISE A JOUR ET A LA MAINTENANCE DE DONNEES ENREGISTREES
Patent Applicant/Assignee:
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Inventor(s):
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Legal Representative:
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Patent and Priority Information (Country, Number, Date):
Patent: WO 200126355 A2 20010412 (WO 0126355)
Application: WO 2000US27127 20001002 (PCT/WO US0027127)
Priority Application: US 99412826 19991005
Designated States: BR JP KR
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Publication Language: English
Filing Language: English
Fulltext Word Count: 2726

Fulltext Availability:
Detailed Description
Claims

Detailed Description
... receiving the record data store the record data in their associated memory devices. As a result, the memory device of each server contains a 15 **copy** of the record data that is similar to a **copy** of the **record data** at other **servers** .

The network 100 attempts to maintain consistency between record data stored at the memory device of each **server** through periodic communications between the 20 **server** . Such periodic communications update the record data of each process every time the selected **server** , the record data owner, updates the record data. Updating such record data requires extensive communication traffic in the network 100, which places a heavy burden...

...common communication
... 101.

... update the record data management, each ... data is required to have a key identifier in addition to an update **sequence number** . The update **sequence number** is incremented each time the data record is updated. The key identifier is shown by way of a set of symbols shown as Sm. The "N" identifies N
the **server** that owns (selected) the record data, and "m" identifies the process within the selected **server** .

For example, record data Sm is a record data 180 for I
process "m" owned by **server** "1." i.e. **server** 121. A record data 185 is a record data for process "m" at **server** 124. All record data are kept in a table format, for example, at memory table 186 at memory device 154.

Each record data may have...be associated 10 with at least a plurality of processes running for serving a plurality of client devices using the communication network through the first **server** , according to another aspect of the invention.

A communication network 100 includes a first and second servers, such as servers 121-24, connected via a...

... copy of the record data. The record data have a first update sequence number and the copy of the record data have a second update **sequence number** . According to an embodiment of the invention, the first update **sequence number** is sent from the first server to the second server.. The first **sequence number** is compared to the second **sequence number** . A transmission of the

...rd data from the f... server to the second server is requested if sequence of the first **sequence number** is higher more than two increments than sequence of the second **sequence number** or if the sequence of the first **sequence number** is less than or equal the sequence of the second **sequence number** . Normally, when the updates occur, the data sent does not include every parts of a record data. According to the invention, retransmission of the entire...

Claim
... record data associated with at least a plurality of processes running for serving a plurality of client devices using said communication network through said first **server** .

8 A communication network including a first and second servers connected via a common network, wherein said first server owns a record data associated with at least one process running for serving a client device using said communication network through said first server, said second server keeping a **copy** of said **record data** , said **record** data having a first update sequence number and said **copy** of said **record data** having a second update sequence number, a method in said communication network comprising the steps of:
sending said first update sequence number from said first...

...associated with at least one process running for serving a client device using said communication network through said first server, said second server keeping a **copy** of said **record data** , an apparatus in said communication network comprising the steps of:
means for performing a Hashing function over said record data to produce a first Hash value;
means for performing said Hashing function over said **copy** of said **record data** to produce a second Hash value;
means for sending said first Hash value from said first server to said second server.

10 The apparatus as recited in claim 9 further comprising:
means for comparing said first Hash value to said second Hash value;
means for requesting a latest **copy** of said **record data** to be sent from said first server to said second server, when in said comparing said first Hash value fails to match to said second...

5/3,K/47 (Item 29 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00731926 **Image available**
METHOD AND SYSTEM FOR DYNAMIC CONFIGURATION OF INTERCEPTORS IN A CLIENT-SERVER ENVIRONMENT
PROCEDE ET SYSTEME DE CONFIGURATION DYNAMIQUE D'INTERCEPTEURS DANS UN ENVIRONNEMENT DE SERVEUR CLIENT
Patent Applicant/Assignee:
IONA TECHNOLOGIES INC, 200 West Street, Waltham, MA 02451, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
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RYAN Craig, 200 West St[redacted]et, Waltham, MA 02451, US, US [redacted]sidence), US (Nationality), (Designated only for: US)
MIHIC Matthew A, 200 West Street, Waltham, MA 02451, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
REIN Barry D (et al) (agent), Pennie & Edmonds LLP, 1155 Avenue of the Americas, New York, NY 10036, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200045256 A1 20000803 (WO 0045256)
Application: WO 2000US2189 20000128 (PCT/WO US0002189)
Priority Application: US 99117938 19990129; US 99117950 19990129; US 99117946 19990129; US 99117944 19990129
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 28537

Fulltext Availability:
Detailed Description

Detailed Description
... so on. Although this fonnat is open to the possibility of duplicate ids, the large size of CORBA::ULong makes this extremely unlikely; effectively, the **server** would need to create 4 billion **objects** before id **duplication** became possible.
1 5 (b) Indirect Persistent Objects
If an object-id for a CORBA::Object is to be generated by the POA with ...

... series of octets in network byte order, containing a struct that consists of two CORBA::ULongs. The first ULong is called the "POA activation **Sequence Number** ".

If the POA uses indirect persistence, this number is obtained from the Daemon; **sequence number** is initialized to I and is incremented by the Daemon each time the POA activates.

If the POA uses direct persistence, the activation number is...

5/3,K/50 **(Item 32 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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00504433 **Image available**
TRANSMITTING REVISIONS WITH DIGITAL SIGNATURES
TRANSMISSION DE REVISIONS COMPORTANT DES SIGNATURES NUMERIQUES
Patent Applicant/Assignee:
KONINKLIJKE PHILIPS ELECTRONICS N V,
PHILIPS AB,
Inventor(s):
EPSTEIN Michael,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9935785 A2 19990715
Application: WO 98IB2120 19981228 (PCT/WO IB9802120)
Priority Application: US 972098 19971231
Designated States: CA CN JP KR AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Publication Language: English
Fulltext Word Count: 9050

Fulltext Availability:
Detailed Description

Detailed Description
... for the automatic revision.

After the document is signed, program module 425 sends the signature to a notary who creates a time stamp containing the **server** 's signature, **server** ID, **sequence number** , and a digital time (including date), signs the time stamp (to produce time stamp signature) and returns the time stamp and time stamp signature which revised documents, in order to save space in random access storage 406 (hard disk, DVD, CD-ROM), program module 426 **copies** old versions of **documents** onto removable computer media (e.g. tape) which is removed from the server, in a process known as archiving. If an archived document is requested...

...for controlling the receiving of
document signatures and transmission of time stamps and time stamp signatures. When a notary signature is requested, program 470 **copies** the **document** signatures from the network into portions of buffer 471. After the time stamps and notary's signatures are produced program 470 copies the time stamp and time stamp signature from portions of buffer 471 onto the network. Program module 472 reads the **server** 's signature from the buffer and creates a time stamp containing: the **server** 's signature, the time that the **server** 's signature was received (in any time format), a notary ID, and a **sequence number** . Then module 472 hashes the time stamp and encrypts the hash with the notary's private key to form a time stamp signature of the...

5/3,K/54 **(Item 36 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.

00384100 **Image available**
TRANSMISSION ACKNOWLEDGE USING SEQUENCE NUMBERS
ACCUSE DE RECEPTION UTILISANT DES NUMEROS D'ORDRE
Patent Applicant/Assignee:
MCI COMMUNICATIONS CORPORATION,
Inventor(s):
KIRCHNER Michael C,
KRISHNASWAMY Sridhar,
REED Norman,
YOUNG Greg,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9724843 A2 19970710
Application: WO 96US20271 19961230 (PCT/WO US9620271)
Priority Application: US 95581745 19951229
Designated States: CA JP MX AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Publication Language: English
Fulltext Word Count: 5725

Fulltext Availability:
Detailed Description

Detailed Description
... the default values.

If the Ack Bit response, which is the expected sequence infori-nation, is not received within that specified time, then the NSPP **server** software checks to determine if the packet can be re-transmitted. If the number of times the message has been transmitted exceeds the application-defined number of retries, then the packet can not be transmitted again, and is discarded. If the packet can be retransmitted again, then the NSPP **server** software requests an Ack Bit and starts the sequence of events again. If the expected sequence information is received within the specified time, then the NSPP **server** software will

be done with the packe[redacted]o more retransmissions after t[redacted] timer expires.

If any sequence information is received, the NSPP **server** software checks
the **sequence numbers** received, with those expected and takes appropriate action.

Note, there is the possibility that duplicate packets may be sent, but, in the end, this does not affect the assurance of receipt of the packet. For example: the **server** is transmitting packet number IO, and last received packet number 3 1, with the Ack Bit set. The client may transmit data before it receives packet number IO from the **server** and include sequence information, sending packet number 32, and last received packet [illegible]. When the **server** receives this, it is not the expected sequence information and continues to wait for a received packet with the expected sequence information. If the timer...

...the client receives the re-transmission of packet number IO, it sends out a control packet acknowledging the duplicate packets. The Server may ignore the **duplicate** sequence **information** if it has not transmitted new data yet, or else the sequence of events may continue.

Note, reliability is a change in the NSPP protocol...

5/3,K/55 **(Item 37 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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00364065 **Image available**
TRANSACTION CLASH MANAGEMENT IN A DISCONNECTABLE COMPUTER AND NETWORK
GESTION DE CONFLITS DE TRANSACTIONS DANS UN ORDINATEUR ET UN RESEAU POUVANT ETRE DECONNECTES
Patent Applicant/Assignee:
NOVELL INC,
FALLS Patrick T,
COLLINS Brian J,
DRAPER Stephen P W,
Inventor(s):
FALLS Patrick T,
COLLINS Brian J,
DRAPER Stephen P W,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9704390 A1 19970206
Application: WO 96US11902 19960718 (PCT/WO US9611902)
Priority Application: US 951344 19950720
Designated States: AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN KE LS MW SD SZ UG AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 20418

Fulltext Availability:
Claims

Claim
... includes applying an operation to the replica by modifying a grouped attribute,
28v The method of claim 1, further comprising the steps of:
associating a **sequence number** with each operation performed on the first computer while the first computer is disconnected from the second computer; and
maintaining a record on the second computer of which **sequence numbers** have been applied to the

second replica during [redacted] merging out step.

29 The method of claim 1, wherein the first computer is a mobile computer and the second computer is a [illegible] **server** computer.

30. The method of claim 1. wherein the first computer and the second computer are each **server** computers in a computer network,

31 A computer-readable storage medium having a configuration that represents data and instructions which cause a first computer and...

5/3,K/58 **(Item 40 from file: 349)**
DIALOG(R)File 349:PCT FULLTEXT
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00180482 **Image available**
DISTRIBUTED INTELLIGENCE NETWORK USING TIME AND FREQUENCY MULTIPLEXING
RESEAU INFORMATIQUE DECENTRALISE A MULTIPLEXAGE TEMPOREL ET EN FREQUENCE
Patent Applicant/Assignee:
FIRST PACIFIC NETWORKS INC,
Inventor(s):
CHU Chi-Chi,
SANGAMESWARA Shanobhog,
VITA Peter Paul Lugtu,
OUYE Michael,
STEVENS David R F,
[illegible] Celeste,
[illegible],
MURPHY Timothy Patrick,
MURPHY Kevin Thomas,
BALDINGER Alan,
CRINGLE Robert J,
McNAMARA Robert P,
ELLIS Gary M,
GHATE Ranjit,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9013956 A1 19901115
Application: WO 89US1806 19890428 (PCT/WO US8901806)
Priority Application: WO 89US1806 19890428
Designated States: AT AU BE CH DE FR GB IT JP KR LU NL SE
Publication Language: English
Fulltext Word Count: 72289

Fulltext Availability:
Claims

Claim
... communicating user entities to make suitable negotiations using single SPs and ensure that receiving user entity has posted a buffer to its transport before the **server** entity issues TX.DATA.SP.REQ command for a large data transfer. When the transport layer receives the large data transfer reso quest, it will...

... as desired by the user entity (note : only TI(P) packets are allowed for data transfer) and give them to the link layer. Transport will **copy** the **data** from the user specified buffer area into the USER iDATA area of the command blocks in sequence, It also tags a **sequence** **number** of the packet into the the **SEQUENCE** **NUMBER** field in the transaction frame. It is apparent that we will not have enough buffers to accom. modate transfer of too many packets at a...

File 275:Gale Group Comp[redacted]r DB(TM) 1983-2004/Mar 31
(c) 2004 The Gale Group
File 621:Gale Group New Prod.Annou.(R) 1985-2004/Mar 31
(c) 2004 The Gale Group
File 636:Gale Group Newsletter DB(TM) 1987-2004/Mar 31
(c) 2004 The Gale Group
File 16:Gale Group PROMT(R) 1990-2004/Mar 31
(c) 2004 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
(c) 1999 The Gale Group
File 148:Gale Group Trade & Industry DB 1976-2004/Mar 30
(c)2004 The Gale Group
File 624:McGraw-Hill Publications 1985-2004/Mar 30
(c) 2004 McGraw-Hill Co. Inc
File 15:ABI/Inform(R) 1971-2004/Mar 30
(c) 2004 ProQuest Info&Learning
File 647:CMP Computer Fulltext 1988-2004/Mar W3
(c) 2004 CMP Media, LLC
File 674:Computer News Fulltext 1989-2004/Mar W3
(c) 2004 IDG Communications
File 696:DIALOG Telecom. Newsletters 1995-2004/Mar 30
(c) 2004 The Dialog Corp.
File 369:New Scientist 1994-2004/Mar W3
(c) 2004 Reed Business Information Ltd.
File 810:Business Wire 1986-1999/Feb 28
(c) 1999 Business Wire
File 813:PR Newswire 1987-1999/Apr 30
(c) 1999 PR Newswire Association Inc
File 610:Business Wire 1999-2004/Mar 31
(c) 2004 Business Wire.
File 613:PR Newswire 1999-2004/Mar 31
(c) 2004 PR Newswire Association Inc

Set	Items	Description
S1	2088	SEQUENCE()NUMBER? ?
S2	290799	(REPLICAT? OR DUPLICAT? OR COPY??? OR COPIE? ? OR REPRODUC? OR MIRROR?)(5N)(OBJECT? ? OR RECORD? ? OR DATA OR INFORMATION OR CONTENT? ? OR FILE? ? OR DOCUMENT? ? OR ITEM? ? OR ENTRY - OR ENTRIES)
S3	1782119	SERVER? ?
S4	8880	DIRECTORY()S3
S5	10	S1(50N)S2(50N)S3:S4
S6	17	S1(20N)S2
S7	21	S5:S6
S8	18	RD (unique items)

00[illegible]857 SUPPLIER NUMBER: 61889358 (THIS IS THE FULL TEXT)

Winning with Win2K. (Product Information)

Marley, Ryan

HP Professional, 14, 4, 18
April, 2000
ISSN: 0896-145X LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 3364 LINE COUNT: 00266

ABSTRACT: One of the most impressive new features of Microsoft's Windows 2000 operating system is the Active Directory Service (ADS), which integrates all directory services into a single unified system. Because ADS is modeled on the Internet Domain Name Service (DNS), it is much more scalable than NT domains.

TEXT:

Microsoft Windows 2000 is finally upon us. The much-anticipated and simultaneously much-dreaded operating system is here, and information technology professionals now have to deal with it. Anticipated, because of new features that promise to make the implementation and maintenance of networks much simpler. Dreaded, because of the complexity, system requirements and uncertainty that Microsoft's newest operating system creates.

Here is a primer on Windows 2000, its new features, and some reasons to adopt, or wait and see.

THE HISTORY AND VERSIONS

Of course, Win2K is the successor to Windows NT, Microsoft's [illegible]ly successful high-end OS that offered some enterprise-level [illegible]ility for a fraction of traditional enterprise OS costs. NT was an [illegible] project that heralded Microsoft's move beyond its traditional [illegible] orientation and fit a basic need as IT organizations began to push services closer to users and farther from traditional data centers.

While the first versions of NT were primarily used as basic file and print servers, it has become a well-rounded OS. Built-in features eventually grew to include remote access services, Web hosting and IP routing. But, of course, NT had a long way to go to catch up with the pack. As Microsoft wanted to become more of a player in the enterprise, its flagship OS had to grow and mature as well and Microsoft crafted plans for a bigger and better "bet the company" operating system.

Eventually, this turned into the various versions of Win2K. Win2K Professional is a replacement for NT Workstation. It's designed for a computer with at least a Pentium 133 MHz processor, 64 MB of RAM and at least 2 GB of hard disk space. There are now three different versions of the NT Server. Win2K Server requires a minimum of a Pentium 133 MHz processor, 256 MB of RAM and 2 GB of hard disk space. Win2K Server supports machines with up to four processors. Win2K Advanced Server has the same minimum requirements, but supports machines with up to eight processors. Win2K Data Center supports up to 32 processors.

Along the way, Win2K acquired a host of new and powerful features. Here's a look at some of the more important ones.

ACTIVE DIRECTORY SERVICE

Active Directory Service (ADS) is the biggest new feature of Win2K, and addresses one of the severe shortcomings of NT in large enterprises. It's an effort to integrate any and all directory services into a single, [illegible] system and reduce the time required to create and maintain the [illegible] directories on your network. At the same time, it's designed to [illegible] to much larger directory sizes than previously possible under NT.

The improved scalability is possible because of a hierarchical tree structure modeled on the Internet Domain Name Service (DNS). This structure distributes the directory service between multiple servers, each responsible for a particular portion of the namespace. This means that the DNS server responsible for hppro.com doesn't have to store every name and address on the Internet. It only needs to know the address of the computers in the hppro.com domain and the location of the DNS servers that can answer questions about everything else. Organizations that wish to provide DNS

information to the Inter[redacted] are required to have two DNS [redacted]vers providing redundancy in the case of a DNS server failure.

The DNS model is markedly different than the domain model currently used by NT. The NT domains are directories primarily used to manage user security. Each domain features a Primary Domain Controller (PDC) that saves security information in the Security Accounts Manager (SAM), a database stored as an encrypted flat file. The SAM contains all the information about the domain: This includes the basic user information, such as account names, passwords and group memberships, and a list of the computers that are members of the domain. Having all this information in a single location helps ease management. However, it also means a single point of failure and a potential performance bottleneck.

Backup Domain Controllers (BDCs) alleviate some of these problems by storing backup copies of the SAM. A computer logging onto the network can be validated by any BDC, easing some of the validation burden. However, the BDC can't perform all PDC functions and doesn't completely eliminate the risk from a single point of failure. For instance, if the PDC is down, you may not be able to change a user's group memberships. And BDCs do not automatically become PDCs. If the PDC is down, you must manually promote the BDC to take over. (This is actually a good idea. Envision a WAN with a PDC in Chicago and BDCs in New York and Los Angeles. If the WAN goes down, both New York and Los Angeles would promote themselves. When the WAN comes back up, you have three PDCs and a large mess.) What's worse, if you wish to make a regular member server become a domain controller, you have to reinstall NT.

NT domains are also not particularly scalable. Per Microsoft's guidelines, domains are generally limited to 26,000 users and 250 groups. This limitation may require multiple domains for a single large organization, which may require establishing trust relationships. Using a trust relationship, a trusting domain allows trusted domains access to its resources. Trust relationships can become very complicated very quickly, requiring a lot of maintenance. For instance, if you have four domains completely trusting each other, you need to establish 12 trust relationships.

With Active Directory, the concepts of primary and backup domain controllers and trust relationships go away. Under Active Directory, there are only domain controllers. To make an NT **Server** computer a domain controller, you need only install and start the Directory Service. Each and every domain controller can be used to update all the directory data, eliminating the problems of downed PDCs. Domain controllers discover other domain controllers on the network, and a technique called multimaster replication is used to propagate changes to the other controllers on the network. Each change in a directory on the domain controller is given an Update **Sequence Number** , which is something like a time stamp. If a controller is **replicating** conflicting **data** from multiple controllers, it can use the Update **Sequence Number** to decide which is the latest data. Domain controllers have authority over a particular namespace, just like in DNS. Active Directory domain names become like Internet domain names to simplify naming. Currently, NT domain names are limited to 15 alphanumeric characters. Under Active Directory, domain names can be identical to Internet names. For example, foo.com is a valid Active Directory domain name. Currently, an organization might have several domains, such as Sales, Finance and Manufacturing.

To share resources, trust relationships would have to be established between the domains. Under Active Directory, these domains become sales.foo.com, finance.foo.com, etc. The traditional trust relationships are not necessary because the domains are now within the Active Directory hierarchy.

Active Directory should offer a lot of possibilities for organizations to simplify the management of their users' information. It's also probably the most complex new feature in Win2K, and if you are planning to implement it, take time to consider how it will work in your organization.

DOMAIN NAME SERVICES

Domain Name Services (DNS) have really changed in Win2K. They now incorporate the latest features, as specified in the Internet Engineering Task Force Request for Comments (RFCs). Specifically, dynamic DNS (DDNS) and service resource records (SRRs) are now supported.

DDNS allows the table of hosts to be updated by nodes on the network, rather than through manual maintenance. This solves one of the more annoying problems associated with Dynamic Host Configuration Protocol (DHCP) on NT networks: name resolution. Before, system administrators were forced to create Windows Internet Name Service (WINS) servers so that hosts with dynamically assigned addresses could be reached via name. Implementing WINS meant more work for system administrators to solve what was really a problem specific to NT, not the Internet at large. With DDNS, Win2K can actually update the name server with the appropriate records when the IP address is assigned. Additionally, Win2K DHCP servers will register non-Win2K clients as they assign addresses, so the entire network is reachable via name. This is a simple idea to describe, but difficult to implement and Microsoft has done a good job of recognizing the shortcomings in NT in the area and resolving them (no pun intended).

SRRs allow you to name specific nodes in DNS as providing specific services. For instance, you can create an SRR that defines the Web server for a domain. Simply create an SRR that defines a host name _http._tcp.hppro.com pointing to www.hppro.com. This allows SRR-capable browsers (like Internet Explorer 5.0) to automatically go to www.hppro.com whenever they are pointed to hppro.com. Similar SRRs are available for other standard Internet services, such as the Lightweight Directory Access Protocol.

Additionally, Win2K automatically creates SRRs for Active Directory controllers and legacy domain controllers. One other important feature is that multiple SRRs can be defined for a single service. So, in the above example, a second SRR can be defined for _http._tcp.hppro. corn pointing to www2.hppro.com, providing some rudimentary fault tolerance and load balancing.

NTFS 5.0

NTFS, the NT native file system, has some interesting new features in version 5.0, including Distributed Link Tracking, Indexing Service, Encrypted File Service and Distributed File System.

Distributed Link Tracking allows applications to access files that have been moved by tracking the link to the file. The new Indexing Service runs in the background, scanning files and indexing the contents for fast retrieval. This allows some very complex queries to find files and quick location of files. The indexes are accessible from other Win2K machines and Internet Information Server. The Encrypted File Service will automatically encrypt data on an NTFS volume. The encryption makes the volume only readable in the machine that encrypts it. (Of course, sending the file to a FAT volume, such as a floppy disk, defeats the encryption.) The Distributed File Service has been available as an add-in under NT 4.0. It allows the creation of a single directory tree, containing file shares from various volumes or servers. This can simplify some share management for users.

All in all, there are quite a few enhancements to NTFS. None of the features may be a "must have" upgrade on their own, but taken together they can provide a reason to upgrade in more complex environments.

TERMINAL SERVICES

Win2K incorporates the features of NT 4.0 Terminal Server Edition. Terminal Services allow a user to connect to the Win2K server and run applications on the server as if you were at the console. This is done with a special program called tsclient that can run on any Windows platform.

Terminal Services have been touted as a way to add mainframe-like functionality to Win2K. Basically, the idea is to permit thin computer/network appliance machines to run server-based applications without the hassles of deploying the software at each client. While this is a relatively good intention, it means that servers will have to have more processing power and memory to support the remote users.

Additionally, Terminal Services licensing is not a trivial matter. There are four types of licenses. Client Access Licenses are assigned to individual users and required to access a server. Internet Connector licenses are limited-use licenses for Web-enabled applications. Built-in licenses are single client access licenses included with Win2K Professional. Temporary licenses are issued dynamically by a server when no other licenses are available. Aside from this general confusion (Microsoft itself seems very confused about how the Internet licenses work), there are costs associated with the additional licenses.

While there is undoubtedly some use for Terminal Services, there has

[illegible] a wholesale ado[illegible]on of this model by IT departm[illegible]s. The [illegible]s hardware requirements necessary to give users decent performance [illegible] seems to be a problem. It seems more likely that Terminal Services will be used for remote management of servers. Since a license is included with Win2K Pro, it seems ideally suited for a network management station.

DISK QUOTAS

As the amount of network storage continues to grow at a very fast pace, most system administration managers keep wondering why and how to bring it under control. Most networks have at least a few users who insist on saving every byte that crosses their screen. Until Win2K, there was no way to automatically monitor and enforce limits on a user's disk storage. Disk quotas can be set for individual users on a disk-by-disk basis.

There have been third-party applications that can enforce and monitor quotas on NTFS disks under NT 4.0. With Win2K, you won't have to spend extra money to get this functionality. The quotas are easy to implement. When permissions are set on a disk or directory structure, you can set the maximum storage limits per user. The quotas are disk-based, not directory-based. If a user has multiple folders on a disk (say, for an application in one share and for their network home directory in another), the total of all folders on the disk is used for enforcing quotas. This may require some individual adjustment to user quota levels, but is not a difficult task. An administrator can even set a warning level so a user receives a pop-up message when nearing their limit. By using the quotas, the system administrator may just save a few dollars on new disks and help users with the discipline of storage management.

OFFLINE STORAGE

Offline storage permits tape drives to be used in addition to online disk drives for storing data. While mainframe operating systems have offered offline storage for decades, the idea is new to Intel processor-based operating systems.

Offline storage is implemented through a complex rule setting process which permits lesser used files to be automatically removed from online devices (hard disks and RAID drives) to offline devices (tape drives and libraries). The process is done transparent to the user who simply accesses the file as they normally would. The difference is in access time: If a file has been moved to offline storage, it may take significantly longer to retrieve the file.

Some planning is required for a successful implementation. The rule set must be well-planned. For instance, files that have not been accessed in the last 90 days would probably be a good target for offline storage. Additionally, if you are not using a tape autoloader, provisions must be made for manually mounting the tapes at the server.

While offline storage is a nice new feature, the demand may not be too strong. It's not a substitute for standard backup procedures and may interfere if only a single drive is on the server. And, of course, users will have a hard time understanding why file access is taking so long. With the cost of disk drives continually plummeting and the steep cost of decent tape auto-loaders, offline storage won't be for everyone.

INTERNET CONNECTION SHARING & NETWORK ADDRESS TRANSLATION

While NT 4.0 has the ability to route IP packets, this is not always the best solution for connecting networks to the Internet. With Win2K Server, there are two new features to help connect a network to the [illegible]: Internet Connection Sharing (ICS) and Network Address Translation [illegible].

ICS is a function of the Dial-up Connections tool. It requires a [illegible] interface and some form of remote Internet connection, such as a modem, DSL adapter or cable modem. ICS is enabled on the external connection and the internal connection is automatically configured with a private Class C IP address (192.168.0.1). Other machines on the internal network get addresses from a DHCP service on the ICS server. Once ICS is configured, there aren't many options. The DNS name services, address range and subnet mask are preconfigured by the ICS service. As internal clients need to access the Internet, the ICS server translates the internal address to a valid external address. Multiple users can be accessing the Internet using a single IP address. The ICS server appears as a single, although busy, node.

What ICS lacks in configurability, it makes up for in ease of use. It's very simple to activate and you can set up ICS with just a few clicks

of the mouse. Even network administrators with no experience in Internet or routing can easily set up a shared connection.

If you need more functionality, you can use NAT. It's more complicated than ICS, but every aspect is configurable, making it very useful. Like ICS, NAT hides the network addresses of the internal network from the Internet at large and allows internal clients to access the Internet at large. Unlike ICS, you can use many valid external addresses, any internal addresses and you can map specific ports. This is a very useful. For instance, you can put a Web server on your internal network, say at address 192.168.1.1. Normally, this private address would not be accessible to the Internet. With NAT, you can map port 80 with a valid IP address to 192.168.1.1 and everyone can access the internal Web server transparently. There are several reasons to want to do this. The first is security. If the internal network is numbered using private IP addresses, there is a limited risk of directly attacking the machines. Since the private addresses are not in the routing tables of any Internet routers, it is impossible to reach the network directly from a remote location. Another reason is flexibility. To move the Web site from one Web server to another, simply change the NAT mapping.

FINAL ANALYSIS

There are a lot of other new features. New laptop settings in Win2K Professional are plentiful. A built-in defragmentation feature is included. Support for roaming desktops has been improved. A new printer management system permitting control of print queues remotely via Web browser has been introduced. The list goes on.

So, should you upgrade? The new features are certainly compelling, but at some point, you just may not have a choice. Eventually, NT 4.0 will not be supported, and it will be imperative to get a supported OS. The industry will definitely move to Win2K because the industry always moves to the latest version, eventually.

There are an estimated 30 million lines of code in Win2K and that means a huge number of opportunities for bugs. While the code has gone through a huge and very public testing process, there is still much uncertainty. The best advice may be to go slow. Start with a plan. Where can you adopt Win2K in your environment and use that opportunity to learn? What planning do you need to successfully implement Active Directory? What resources do you need to support new Win2K users?

Don't make the mistake of upgrading, simply to upgrade. To successfully implement Win2K, you will need some foresight and planning. By examining the new features, you'll probably find some benefit to your organization. After that, you'll be ready.

- Ryan Maley is a Microsoft Certified Systems Engineer and the Information Systems Manager for a Midwestern manufacturing company. He can be reached at ryan@maley.org.

8/3,K/1 (Item 1 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

02394857 SUPPLIER NUMBER: 61889358 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Winning with Win2K.(Product Information)
[illegible], Ryan
[illegible]ssional, 14, 4, 18
[illegible]
[illegible]96-145X LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 3364 LINE COUNT: 00266

... the concepts of primary and backup domain controllers and trust relationships go away. Under Active Directory, there are only domain controllers. To make an NT **Server** computer a domain controller, you need only install and start the Directory Service. Each and every domain controller can be used to update all the...

...is used to propagate changes to the other controllers on the network. Each change in a directory on the domain controller is given an Update **Sequence Number**, which is something like a time stamp. If a controller is **replicating** conflicting **data** from multiple controllers, it can use the Update **Sequence Number** to decide which is the latest data. Domain controllers

8/3,K/2 (Item 2 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

02134698 SUPPLIER NUMBER: 20105052 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Street's systems process records 2.5 billion shares. (New York Stock Exchange) (Industry Trend or Event)
Wall Street & Technology, v15, n12, p8(1)
[illegible]
[illegible]: 1060-989X LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 521 LINE COUNT: 00045

... it looped around and started recounting," explains Bill Broka, senior vp at Nasdaq. Neither Nasdaq's system nor the quote vendors' could recognize the new **sequence numbers** and discarded them as being **duplicate entries**. As Nasdaq neared ACT's file capacity it started putting trades aside, until it had a "program fix" to process them after the market close...

8/3,K/3 (Item 3 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

02055239 SUPPLIER NUMBER: 19222207 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Internet security. (firewalls that offer both security and flexibility) (Software Review)(Evaluation)
Giles, Roosevelt
Network VAR, v5, n3, p22(7)
March, 1997
DOCUMENT TYPE: Evaluation ISSN: 1082-8818 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 5074 LINE COUNT: 00469

... secure a sufficient following to attain market viability." In the meantime, three primary. strategies for maximizing the longevity of the current IP standard have emerged: **sequence number** randomization, private addressing, and use of non-IP protocols.

Thus, Cisco PIX Firewall provides the functionality of a proxy **server** without the extra administrative overhead and the need for special client software. Typical proxy **servers** run at the user level on a multi-user operating system and operate by **copying data** between

separate TCP connections[redacted]e PIX Firewall saves lots of [redacted] cycles by reducing the number of state transitions by not supporting user level proxy services. PIX Firewall operates on the packets directly, resulting in higher performance.

SEQUENCE NUMBER RANDOMIZATION

The technique of IP address spoofing has been well known since Robert T. Morris first described it in 1985. Recently, a rash of such...

8/3,K/4 (Item 4 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01817717 SUPPLIER NUMBER: 17369266 (USE FORMAT 7 OR 9 FOR FULL TEXT)
ISPF MODEL Command. (Tutorial)
Urbanas, Donald C.
Enterprise Systems Journal, v10, n6, p62(6)
June, 1995
DOCUMENT TYPE: Tutorial ISSN: 1053-6566 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 2175 LINE COUNT: 00167

... back to the member named DISPLAY (see Example 3). At that time, you will see the command syntax, keyword descriptions and return code explanations. To **copy information** to an existing member, enter MODEL on the command line and tab down to the line **sequence number** where the new data is to be inserted. Place an A on that line and the data will be added there after the subtopic has PANEL-NAME, etc. are consistent through the COBOL services examples.

=NOTE= Lines

When the model has been **copied** into the **file** , the lines labeled =NOTE= are usually displayed in a different color from the lines marked with **sequence numbers** (see Example 3). The lines with sequence numbers list the ISPF service example and associated return codes. The =NOTE= lines describe the service keywords and...

8/3,K/5 (Item 5 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01804827 SUPPLIER NUMBER: 17155740 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Tools and utilities. (1995 Database Buyer's Guide and client/server sourcebook) (Buyers Guide)
IBMS, v8, n6, p72(29)
May 1, 1995
DOCUMENT TYPE: Buyers Guide ISSN: 1041-5173 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 45154 LINE COUNT: 03869

... than 100 environments. Lets users develop single-user or multiuser nonserver applications royalty-free. Lets users migrate existing c-tree Plus applications to the FairCom **server** by recompiling the application. Features single-user transaction processing; fixed/variable length **records** ; alternate collating sequence; **duplicate** keys; automatic **sequence numbers** ; native operating system I/O utilization for maximum portability and performance; dynamic space reclamation; hashed data and index caching; multiple simultaneous sets/batches; resource records...

8/3,K/6 (Item 6 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01719615 SUPPLIER NUMBER: 16302555 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Phone Notes delivers. (Integration: Network) (Lotus Phone Notes) (includes related article on using Powersoft PowerBuilder Library with Notes) (Hard Workin') (Tutorial)

Watterson, Karen
Windows Sources, v3, n1, p170(3)
Jan, 1995
DOCUMENT TYPE: Tutorial ISSN: 1065-9641 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2184 LINE COUNT: 00181

... To use LanClient, all you have to do is make sure the Options
Remark! Preferences settings are set up with the name of the Remark!
Server and your phone number (or extension).
Check Out the Prototype
The e-mail reader sample application that Lotus ships with Phone Notes lets Notes users call in by phone and uses the voice-synthesis feature of the Remark! **Server** to read their Notes e-mail messages over the phone.
If you **copy** the MOBILE.EXE compressed sample **file** onto your local Notes workstation and run it, you'll be able to File
Open Database the page-summary mail-retrieval application database from Lotus Notes. What you'll see is the Notes database in the default view, "By Section and **Sequence Number** ." (The paper-clip icons indicate Notes attachments--the Remark! voice clips.) Expanding the second command, Play Welcome Message, shows what a Phone Notes command form looks like.
The Lotus Phone Notes Application Kit is useless without a telephony **server** . Phone Notes is a very simple language with a mere 17 commands plus a Phone Notes template called PNOTES.NTF. Phone Notes applications are simply...

...command parameters. Each form in a Phone Notes database has the same general three-part appearance: the top, with a title (and optional section and **sequence number** fields); a middle section with command-specfic parameters; and a bottom section with branching instructions.
The Play command lets you specify text, a number, or...

...pager when you receive Notes mail messages that meet predetermined selection criteria. You can then use a Touch-Tone telephone to call the Phone Notes **server** , retrieve the full text of these mail messages, and either listen to voice-synthesized versions or tell the application to send [illegible] to a...

8/3,K/7 **(Item 7 from file: 275)**
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01688545 SUPPLIER NUMBER: 15356060 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Tools and utilities. (1994 Database Buyer's Guide and Client/Server Sourcebook) (Buyers Guide)
DBMS, v7, n6, p63(29)
June 15, 1994
DOCUMENT TYPE: Buyers Guide ISSN: 1041-5173 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 46074 LINE COUNT: 03903

... more than 100 environments. Lets users develop single-user or multiuser nonserver applications royalty-free. Also lets users migrate existing c-tree+ applications to the **server** by recompiling applications. Features include single-user transaction processing, fixed/variable-length **records** , alternate collating sequence, **duplicate** keys, and/or automatic **sequence numbers** ; native operating system I/O utilization for maximum portability and performance; dynamic space reclamation; high-speed hashed data and index caching; multiple simultaneous sets/batches...

8/3,K/8 **(Item 8 from file: 275)**
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2004 The Gale Group. All rts. reserv.

01629411 SUPPLIER NUMBER: 14622100 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Caching in on file system locks. (Technical)

Schenkenberger, Brian
Digital Systems Journal, v15, n6, p17(7)
Nov-Dec, 1993
DOCUMENT TYPE: Technical ISSN: 1067-7224 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 5709 LINE COUNT: 00447

... On a subsequent access to the file, the file system would find the sequence number in the lock resource block out of sync with the **sequence number** in the BFRD. The system would consider the data in the buffer invalid and obtain the file header **information** from the on-volume **copy** , repopulating the buffer. This is the presupposition of the example programs.

The average application should never have to be concerned with the aforementioned locks. The...

8/3,K/9 (Item 9 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2004 The Gale Group. All rts. reserv.

01498500 SUPPLIER NUMBER: 11908713 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Using a mainframe as a server. (how to use Advanced Revelation as a PC client and Micro Decisionware's Database Gateway as a local area network-to-mainframe link)(Client/Server Advisor)
Lyall, Charles; Polis, Myron
Data Based Advisor, v10, n2, p71(3)
Feb, 1992
ISSN: 0740-5200 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2002 LINE COUNT: 00153

... a Modify File System (MFS), and attached it to every LAN file related to the mainframe. The MFS intercepts WRITE and DELETE operations, and posts **copies** of the **records** to a LAN-based transaction posting file. A transaction number, a record **sequence number** within the transaction, the record key, the database action (write or delete), and the name of the file is appended to each record in the...

8/3,K/10 (Item 10 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2004 The Gale Group. All rts. reserv.

01418507 SUPPLIER NUMBER: 10370755 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Understanding fault-tolerant distributed systems.
Cristian, Flaviu
Communications of the ACM, v34, n2, p56(23)
Feb, 1991
ISSN: 0001-0782 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 18464 LINE COUNT: 01495

... the operating system.

What Failure Semantics is Specified for Hardware Servers?

Developers of operating system software typically assume that CPU, I/O and communication controller **servers** have crash failure semantics, that memory elements have read omission failure semantics, that ... previously mentioned systems make these assumptions. Such strong hardware failure semantics enable system designers to use known hierarchical and group masking techniques to mask hardware **server** failures, such as storage duplexing to mask loss of **data replicated** on two-memory or disk **servers** with read omission failure semantics [42] or virtual-circuits to mask omission or performance communication failures by using time-outs, **sequence numbers** , acknowledgements and retries [61]. Moreover, when masking is not possible, strong hardware **server** failure semantics such as omission and crash enable system programmers to ensure that the operating system and communication services they implement have a strong failure...

8/3,K/11 (Item 11 f[redacted] file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2004 The Gale Group. All rts. reserv.

01177143 SUPPLIER NUMBER: 04274194 (USE FORMAT 7 OR 9 FOR FULL TEXT)
No backups means going in reverse. (includes article on hard disk backup systems)
Dickinson, John
PC Magazine, v5, p241(6)
June 10, 1986
LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 2776 LINE COUNT: 00200

... from one floppy disk to the next. That capability makes it critical that you be careful to label each floppy disk used with its BACKUP **sequence number** .
RESTORING YOUR FILES
Unlike the **files** created by using **COPY** , **files** generated by BACKUP cannot be directly processed through regular DOS procedures. Before they can be used, BACKUP files must be run through the complementary RESTORE...

8/3,K/12 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2004 The Gale Group. All rts. reserv.

07378882 Supplier Number: 60039302 (USE FORMAT 7 FOR FULLTEXT)
What Network Is That File On Again?(Microsoft Network Directory)(Product Information)
Greenberg, Ross M.
Network Computing, v9, n17, pNT1
Sept 15, 1998
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 1393

... a server database over an unknown number of servers, with each server being essentially a peer of the others? Consider also that the number of **servers** may even change dynamically. Consider further: if there are two clients on two separate ADS **servers** hitting on the same object--residing perhaps on a third **server** , at the same time--are there foolproof ways of propagating those updates through the network? Add in the possibility of potential system or network crashes--not all **servers** are running NT, after all--and it becomes an interesting puzzle.
Here's what ADS does: only as a last resort are timestamps used--synchronization of clocks across a network is surprisingly difficult to accomplish with utter reliability. Active Directory uses what Microsoft calls Update **Sequence Numbers** , a 64-bit number administered automatically on each **server** . By each **server** keeping track of the USNs of all **servers** it replicates with, querying across the net for all subsequent updates allows for a clock-independent means of **replication** management. Each update to an **object** 's data or set of properties is melded to the USN, so the last update can be ascertained easily from earlier ones. Starting from any...

8/3,K/13 (Item 2 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2004 The Gale Group. All rts. reserv.

05397837 Supplier Number: 53138314 (USE FORMAT 7 FOR FULLTEXT)
Are You Ready for Active Directory?(in Microsoft Windows NT 5.0)(Product Development)(Abstract)
ENT, p34(1)
[illegible] 19, 1997
[illegible]: English Record Type: Fulltext
[illegible] Type: Abstract

Document Type: Magazine/[redacted]nal; Professional
Word Count: 745

... physical structure of the network from the user. A simple directory query will help users locate resources rather than their having to worry about cryptic **server** and share names.

That doesn't mean that as system administrator, you don't need to think about your physical network. Regarding the physical aspects of Active Directory, you need to start thinking in terms of "sites" (for example, a LAN, and " **servers** " (that is, any machine that contains a domain replica). **Replication** of domain **information** takes place intrasite, while specifically designated **servers** are responsible for intersite replication.

Using multimaster replication, Active Directory assures that changes made in one copy of a directory are automatically replicated to all other directory copies. To ensure accuracy, Active Directory uses an Update **Sequence Number** (USN) and version number to track changes for each record as well as for each property of each **record** . When a **replication** cycle starts, the **replication servers** query for **information** that is newer than the requesting **server** . In cases where changes can't wait until the beginning of a new replication cycle, Active Directory forces the update by pushing the change out...

8/3,K/14 (Item 3 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2004 The Gale Group. All rts. reserv.

05345800 Supplier Number: 48132029 (USE FORMAT 7 FOR FULLTEXT)
Are You Ready for Active Directory?
Miller, David B.
[illegible], p34
[illegible], 1997
[illegible]: English Record Type: Fulltext
[illegible] Type: Magazine/Journal; Professional
[illegible] Count: 745

... physical structure of the network from the user. A simple directory query will help users locate resources rather than their having to worry about cryptic **server** and share names.

That doesn't mean that as system administrator, you don't need to think about your physical network. Regarding the physical aspects of Active Directory, you need to start thinking in terms of "sites" (for example, a LAN) and " **servers** " (that is, any machine that contains a domain replica). **Replication** of domain **information** takes place intrasite, while specifically designated **servers** are responsible for intersite replication.

Using multimaster replication, Active Directory assures that changes made in one copy of a directory are automatically replicated to all other directory copies. To ensure accuracy, Active Directory uses an Update **Sequence Number** (USN) and version number to track changes for each record as well as for each property of each **record** . When a **replication** cycle starts, the **replication servers** query for **information** that is newer than the requesting **server** . In cases where changes can't wait until the beginning of a new replication cycle, Active Directory forces the update by pushing the change out...

8/3,K/15 (Item 1 from file: 148)
[illegible]File 148:Gale Group Trade & Industry DB
[illegible] The Gale Group. All rts. reserv.

[illegible] SUPPLIER NUMBER: 79756328 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Toxic nostalgia.
Stewart, Gary M.
IIE Solutions, 33, 10, 44
Oct, 2001
ISSN: 1085-1259 LANGUAGE: English RECORD TYPE: Fulltext

WORD COUNT: 1692 LINE COUNT: 00128

... manager. Each day the box is opened and new suggestions are removed. The HR manager records the date the suggestion was received, assigns it a **sequence number** , and **records** it in a logbook. Four **copies** of the suggestion are made. One goes to the neighborhood zealot for improvement. He or she is the driving force behind the day-to-day...

8/3,K/16 (Item 2 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
(c)2004 The Gale Group. All rts. reserv.

06109311 SUPPLIER NUMBER: 12529634 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Material handling keeps Avon calling. (Avon Products Inc.) (Cover Story)
Witt, Clyde E.
Material Handling Engineering, v47, n8, p34(4)
August, 1992
DOCUMENT TYPE: Cover Story ISSN: 0025-5262 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 2440 LINE COUNT: 00186

... could divert an order to any line to get any product. Right now we don't need that kind of flexibility so the lines are **mirror** images."
Just prior to **entry** into the picking module, each carton has its two-digit batch **sequence number** ink-sprayed on the side. In the assembly station the operator matches that two-digit number to a lighted numerical diode (LED) to verify selection...

8/3,K/17 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
(c) 2004 ProQuest Info&Learning. All rts. reserv.

01065465 97-14859
Electronic cheque presentment
Anonymous
Cash Management News n110 PP: 8-10 Jun 1995
ISSN: 0268-6635 JRNL CODE: CAM
WORD COUNT: 1436

...TEXT: ECP can have an effect on some of the back office applications. Now cheques are being captured electronically and posted from that electronic data. The **sequence number** , for example, that the DDA system uses may not correlate directly with where the bank has a microfilm **copy** of that **item** from the reader sorter.

Future developments

Besides the use of ECP, some countries may adopt image technology for cheque clearing. In Europe the Banque de...

8/3,K/18 (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
(c) 2004 ProQuest Info&Learning. All rts. reserv.

00170854 82-12415
Proper Care of Magnetic Media Protects Data Base
Feldman, Samuel
Word Processing & Information Systems v9n4 PP: 27-30 Apr 1982
ISSN: 0093-5794 JRNL CODE: WPW

...ABSTRACT: establishment of procedures should be characterized by checklists, training, drills, and authorization limits. Magnetic medium should be properly labeled and may contain such information as **sequence number** , date, identifier, **contents** , **duplication** , and verification. Figure.

```
File   8:Ei Compendex(R) 1970-2004/Mar W3
         (c) 2004 Elsevier Eng.  Info. Inc.
File  35:Dissertation Abs Online 1861-2004/Feb
         (c) 2004 ProQuest Info&Learning
File 202:Info. Sci. & Tech. Abs. 1966-2004/Feb 27
         (c) 2004 EBSCO Publishing
File  65:Inside Conferences 1993-2004/Mar W4
         (c) 2004 BLDSC all rts. reserv.
File   2:INSPEC 1969-2004/Mar W3
         (c) 2004 Institution of Electrical Engineers
File  94:JICST-EPlus 1985-2004/Mar W2
         (c)2004 Japan Science and Tech Corp(JST)
File   6:NTIS 1964-2004/Mar W4
         (c) 2004 NTIS, Intl Cpyrght All Rights Res
File 144:Pascal 1973-2004/Mar W3
         (c) 2004 INIST/CNRS
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File  34:SciSearch(R) Cited Ref Sci 1990-2004/Mar W3
         (c) 2004 Inst for Sci Info
File  99:Wilson Appl. Sci & Tech Abs 1983-2004/Feb
         (c) 2004 The HW Wilson Co.
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
         (c) 2002 The Gale Group
File 266:FEDRIP 2004/Feb
         Comp & dist by NTIS, Intl Copyright All Rights Res
File  95:TEME-Technology & Management 1989-2004/Mar W2
         (c) 2004 FIZ TECHNIK
File 438:Library Lit. & Info. Science 1984-2004/Feb
         (c) 2004 The HW Wilson Co
```

Set	Items	Description
S1	839	SEQUENCE()NUMBER? ?
S2	70061	(REPLICAT? OR DUPLICAT? OR COPY??? OR COPIE? ? OR REPRODUC? OR MIRROR?)(5N)(OBJECT? ? OR RECORD? ? OR DATA OR INFORMATION OR CONTENT? ? OR FILE? ? OR DOCUMENT? ? OR ITEM? ? OR ENTRY - OR ENTRIES)
S3	128684	SERVER? ?
S4	228	DIRECTORY()S3
S5	5	S1 AND S2 AND S3:S4
S6	28	S1 AND S2
S7	30	S1 AND S3:S4
S8	53	S5:S7
S9	30	RD (unique items)

9/5/8 (Item 8 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

02963030 E.I. Monthly No: EI9010114515
Title: Directories for networks with casually connected users.
Author: Gopal, Inder; Segall, Adrian
Corporate Source: IBM T.J. Watson Research Cent, Yorktown Heights, NY, USA
Source: Computer Networks and ISDN Systems v 18 n 4 May 10 1990 p 255-262
Publication Year: 1990
CODEN: CNISE9 ISSN: 0169-7552
Language: English
Document Type: JA; (Journal Article) Treatment: A; (Applications); T; (Theoretical)
Journal Announcement: 9010
Abstract: In computer networks with decentralized control, it is necessary to provide a directory service which enables users to discover dynamically the location of other users. In this paper, we examine the protocols for maintaining consistent directory information for casually connected users that may connect and disconnect from the network at will. We propose for both hierarchical and nonhierarchical directory systems. Our protocols do not rely on **sequence numbers** or time-stamps and do not require safe store at the user. We propose a definition of correctness in such an environment and prove that our protocols achieve this definition. (Author abstract) 7 Refs.
Descriptors: *COMPUTER NETWORKS--*Protocols; COMPUTER PROGRAMMING--Algorithms
Identifiers: DIRECTORIES; NAME **SERVERS** ; NAMING; DIRECTORY UPDATE; HIERARCHICAL PROTOCOLS; NONHIERARCHICAL PROTOCOLS
Classification Codes:
723 (Computer Software)
72 (COMPUTERS & DATA PROCESSING)

9/5/11 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

7568211 INSPEC Abstract Number: C2003-04-6150N-097
Title: A fault-tolerant sequencer for timed asynchronous systems
Author(s): Baldoni, R.; Marchetti, C.; Piergiovanni, S.T.
Author Affiliation: Dipt. di Informatica e Sistemistica, La Sapienza Univ., Rome, Italy
Conference Title: Euro-Par 2002 Parallel Processing. 8th International Euro-Par Conference. Proceedings (Lecture Notes in Computer Science Vol.2400) p.578-88
Editor(s): Monien, B.; Feldmann, R.
Publisher: Springer-Verlag, Berlin, Germany
Publication Date: 2002 Country of Publication: Germany xxix+993 pp.
ISBN: 3 540 44049 6 Material Identity Number: XX-2002-02726
Conference Title: Euro-Par 2002 Parallel Processing. 8th International Euro-Par Conference. Proceedings
Conference Date: 27-30 Aug. 2002 Conference Location: Paderborn, Germany
Language: English Document Type: Conference Paper (PA)
Treatment: Practical (P); Theoretical (T)
Abstract: We present the specification of a sequencer service that allows independent processes to get a **sequence number** that can be used to label successive operations (e.g. to allow a set of independent and concurrent processes to get a total order on their operations). Moreover, we provide an implementation of the sequencer service in a specific partially synchronous distributed system, namely the timed asynchronous model. As an example, if a sequencer is used by a software replication scheme then we get the advantage to deploy **server** replicas across an asynchronous distributed system such as the Internet. (10 Refs)
Subfile: C
Descriptors: distributed processing; fault tolerant computing; protocols;

scheduling
Identifiers: fault-tolerant sequencer; timed asynchronous systems; sequencer service specification; concurrent processes; partially synchronous distributed system; timed asynchronous model; software replication scheme; Internet; protocol; asynchronous distributed system
Class Codes: C6150N (Distributed systems software); C5620 (Computer networks and techniques); C5470 (Performance evaluation and testing)

9/5/14 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC

6359937 INSPEC Abstract Number: B1999-11-6150M-002, C1999-11-5640-002
Title: A multicast protocol based on a single logical ring using a virtual token and logical clocks
Author(s): Weijia Jia; Jiannong Cao; To-Yat Cheung; Xiaohua Jia
Author Affiliation: Dept. of Comput. Sci., City Univ. of Hong Kong, Hong Kong
Journal: Computer Journal vol.42, no.3 p.202-20
Publisher: Oxford University Press for British Comput. Soc,
Publication Date: 1999 Country of Publication: UK
CODEN: CMPJA6 ISSN: 0010-4620
SICI: 0010-4620(1999)42:3L.202:MPBS;1-F
Material Identity Number: C022-1999-006
Language: English Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: A novel and efficient protocol based on a single logical ring for multicast communication among a group of processes is presented. The senders and receivers are merged in the same group and this peer group reflects a cooperative (**mirror**) group of **information servers** . The protocol maintains consistency in the group by using two strategies. First, by placing a total **sequence number** in each of the multicast messages, it guarantees total ordering of message delivery for each member. Second, in contrast to other ring protocols which are based on real token passing, it uses a virtual token and achieves message atomicity by using up to n point-to-point control messages. Since no real token passing messages are rotating on the ring, the position of the token holder is calculated by using a logical clock located in each of the processes. The protocol can tolerate communication faults, process crash failures and network partitioning. The protocol has been implemented and experimental results show that the protocol achieves satisfactory performance. (26 Refs)
Subfile: B C
Descriptors: computer network reliability; message passing; multicast communication; protocols
Identifiers: multicast protocol; single logical ring; virtual token; logical clocks; multicast communication; information **servers** ; message delivery; token passing; message atomicity; communication fault tolerance; network partitioning; performance
Class Codes: B6150M (Protocols); B6210L (Computer communications); C5640 (Protocols); C5670 (Network performance)

9/5/16 (Item 6 from file: 2)
DIALOG(R)File 2:INSPEC

5269598 INSPEC Abstract Number: B9607-6210L-001, C9607-5620L-001
Title: Totem: a fault-tolerant multicast group communication system
Author(s): Moser, L.E.; Melliar-Smith, P.M.; Agarwal, D.A.; Budhia, R.K.; Lingley-Papadopoulos, C.A.
Author Affiliation: Dept. of Electr. & Comput. Eng., California Univ., Santa Barbara, CA, USA
Journal: Communications of the ACM vol.39, no.4 p.54-63
Publisher: ACM,
Publication Date: April 1996 Country of Publication: USA

CODEN: CACMA2 ISSN: 0[redacted]-0782
SICI: 0001-0782(199604)39:4L.54:TFTM;1-B
Material Identity Number: C056-96006
U.S. Copyright Clearance Center Code: 0001-0782/96/0400/$3.50
Language: English Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: The Totem system enables fault-tolerant applications in distributed systems to maintain the consistency of **replicated information** by providing reliable totally ordered multicasting of messages. A hierarchy of protocols delivers messages to processes within process groups over a single LAN or over multiple LANs interconnected by gateways. The message ordering strategy of Totem employs timestamps to define a consistent total order on messages system-wide and **sequence numbers** to ensure reliable delivery of messages. Hardware broadcasts, multiple rings, filtering of messages, and process group locality enable Totem to achieve high throughput and low predictable latency. (18 Refs)
Subfile: B C
Descriptors: computer network reliability; fault tolerant computing; groupware; LAN interconnection; local area networks; message passing; programming; protocols
Identifiers: Totem system; fault-tolerant multicast group communication system; distributed systems; **replicated information** consistency; reliable totally ordered message multicasting; protocol hierarchy; process groups; single LAN; gateway-interconnected multiple LANs; message ordering strategy; timestamps; reliable message delivery; hardware broadcasts; multiple rings; message filtering; process group locality; high throughput system; low predictable latency system
Class Codes: B6210L (Computer communications); B6150M (Protocols); C5620L (Local area networks); C6150N (Distributed systems software); C6110 (Systems analysis and programming); C5640 (Protocols); C6130G (Groupware); C5670 (Network performance)

9/5/17 (Item 7 from file: 2)
DIALOG(R)File 2:INSPEC

4 64319 INSPEC Abstract Number: B9410-6150M-053, C9410-5640-047
Title: Crash resilient communication in dynamic networks
Author(s): Dolev, S.; Welch, J.L.
Author Affiliation: Dept. of Comput. Sci., Texas A&M Univ., College Station, TX, USA
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Conference Title: 7th International Workshop, WDAG'93. Distributed Algorithms
Conference Date: 27-29 Sept. 1993 Conference Location: Lausanne, Switzerland
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Abstract: An end-to-end data delivery protocol for dynamic communication networks is presented. The protocol uses bounded **sequence numbers** and can tolerate both link failures and processor crashes. Previous bounded end-to-end protocols could not tolerate crashes. A reliable data link layer is not assumed; instead the protocol is designed to work on top of the "bare" network, consisting of nodes connected by FIFO non-duplicating links that can lose messages. Our protocol retransmits messages and uses multiple paths, and thus causes messages to be **duplicated** and reordered. Yet the **data items** are delivered without omission or **duplication** and in FIFO fashion. (16 Refs)
Subfile: B C
Descriptors: protocols; telecommunication networks
Identifiers: crash resilient communication; dynamic networks; end-to-end

data delivery protocol; [redacted]amic communication networks; b[redacted]ded **sequence numbers** ; link failures; processor crashes
Class Codes: B6150M (Protocols); C5640 (Protocols)

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DIALOG(R)File 2:INSPEC

4468185 INSPEC Abstract Number: C9310-6160-010
Title: Data base recovery in shared disks and client- server **architectures**
Author(s): Mohan, C.; Narang, I.
Author Affiliation: IBM Almaden Res. Center, San Jose, CA, USA
Conference Title: Proceedings of the 12th International Conference on Distributed Computing Systems (Cat No.92CH3175-7) p.310-17
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Conference Sponsor: IEEE; Inf. Process. Soc. Japan
Conference Date: 9-12 June 1992 Conference Location: Yokohama, Japan
Language: English Document Type: Conference Paper (PA)
Treatment: Practical (P)
Abstract: Solutions to the problem of performing recovery correctly in shared-disks (SD) and client- **server** (CS) architectures are presented. In SD, all the disks containing the data bases are shared among multiple instances of the database management system (DBMS). In CS, the **server** manages the disk version of the data base. The clients, after obtaining database pages from the **server** , cache them in their buffer pools. Clients perform their updates on the cached pages and produce log records. In write-ahead logging (WAL) systems, a monotonically increasing value called the log **sequence number** (LSN) is associated with each log record. Every database page contains the LSN of the log record describing the most recent update to that page. This is required for proper recovery after a system failure. A technique for generating monotonically increasing LSNs in SD and CS architectures without using synchronized clocks is presented.